

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Noxious Weeds*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Noxious weed infestations are controlled according to the Managing Competing and Unwanted Vegetation EIS, the Forest Plan and applicable State laws and regulations*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS:

*Are Noxious weeds infestations being treated in accordance with the Managing Unwanted or Competing Vegetation EIS, Forest Plan direction and applicable State laws and regulations?*

THRESHOLD OF VARIABILITY: *Assigned targets are not met by 10% or more.*

SUGGESTED SAMPLING METHODS:

*Monitor annual attainment report, annual budget requests, and review treatment plans/EA's*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY *10 years*

MONITORING RESPONSIBILITY. *District and SO Range Staff*

REPORTING RESPONSIBILITY. *Range Staff Officer*

ESTIMATED COST OF MONITORING: *\$1,000*

PRECISION: *M*

RELIABILITY *H*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Watershed Standards and Guidelines and BMP's*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Maintain or improve the unique and valuable characteristics of riparian areas and maintain or improve water quality, wildlife habitat and fish habitat near or within riparian ecosystems*

*Maintain water quality and quantity and meet or exceed State water quality regulations.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS:

- 1) *Are S&G and BMP's being properly implemented within each management project area?*
- 2) *Are S&G and BMP's effective.*
  - *During 100% of the weather events that occur during a management project's implementation or soon after?*
  - *On 100% of the appropriate application areas within each management project area?*

*The standards for effectiveness always include whether or not State Water Quality Standards are being achieved. At times these may also be assessed: prevention of detrimental impacts on State designated Beneficial Uses, and achievement of Forest Plan goals*

THRESHOLD OF VARIABILITY *Failure to meet State Water Quality Standards and Protect Beneficial Uses With respect to other question components, a 5% or more deviation (95% success rating) will trigger corrective action*

SUGGESTED SAMPLING METHODS:

- 1) *Perform field inventory to determine which S&G and BMP's should be applied in what places as prescribed by Forest and project management plans For these potential situations, determine if S&G and BMP's were implemented and then if done correctly Inventory will be conducted by watershed specialists, project administrator and/or interdisciplinary team*
- 2) *Sample key water quality, riparian or channel condition parameters above and below specific S&G and BMP implementation areas The parameters will usually be chosen from: eroded soil deposits on floodplain, sediment deposits in channel, water temperature, peak streamflows at culverts, turbidity, bank stability, riparian vegetation and stream shade*

MONITORING FREQUENCY (per year) (by question)

- 1) *5 timber sales (includes associated roads); 3 mining operations, 4 grazing allotments; 150 SMU road segments*
- 2) *1 timber sale; 1 grazing allotment*

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ISSUE *Watershed Standards and Guidelines and BMP's*

REPORTING FREQUENCY: *1) Annual. 2) As each monitoring project is completed (see Remarks)*

MONITORING RESPONSIBILITY. *District Rangers/SO Staff*

REPORTING RESPONSIBILITY *Forest Watershed Staff*

ESTIMATED COST OF MONITORING (per year) (by question) *1) \$7,500 2) \$6,100*

PRECISION *M*

RELIABILITY *M*

REMARKS

- *Effectiveness monitoring for grazing/range S&G and BMP's is much narrower in scope than that dealt with under Range Vegetation Condition and Riparian Cumulative Effects. These two assess effects of all range management BMP's together, whereas here, single BMP's are isolated such as utilization standards versus bank vegetation overhang and bank stability, or season of use versus brush density increase.*
- *Effectiveness monitoring for timber sale S&G and BMP's will typically assess 3 to 5 practices for each management project monitored. It will take about 1 to 3 years for each timber sale project and about 5 to 10 years for each grazing allotment -- report will be at end of these time periods.*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Riparian Area Cumulative Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Maintain or improve the unique and valuable characteristics of riparian areas and maintain or improve water quality, wildlife habitat and fish habitat near or within riparian ecosystems.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR <sup>2</sup> X LIKELIHOOD OF ERROR <sup>3</sup> = RISK INDEX <sup>6</sup>

### MONITORING QUESTIONS

- *The overall question is: Is long-term (20 to 100 year plus) riparian and channel health being maintained, or if in poor condition, being improved?*
- *More specific questions are:*
  - 1) *Does aquatic habitat have a habitat suitability index (HSI) that is at least 90% of the natural potential HSI?*
  - 2) *Does riparian cover have a value that is at least 80% of the natural potential for the area?*
  - 3) *For channel and riparian areas that are presently below the 90% and 80% standards, is the rate of condition improvement such that a transition potential will be obtained within 20 years?*

*Natural potential is defined as the environmental conditions that would occur if there were no or had been no detrimental management impacts on the channel and riparian zone condition*

*Transition potential is defined as the HSI or cover value that could be expected to occur at the year 20 if there were no further detrimental management impacts within the recovery period -- this may or may not be the natural potential (natural potential may not be achievable for 100 years, for instance)*

THRESHOLD OF VARIABILITY: *No Immediate evaluation or corrective action if S&G and BMP's are not being met*

### SUGGESTED SAMPLING METHODS

*Permanently installed terrestrial and stream channel transects using Cowfish and Haugen or similar procedures Photo documentation. Approximately 16 representative locations*

MONITORING FREQUENCY *Each location will be measured once every 4 years, and be tracked over duration of many decades*

REPORTING FREQUENCY. *Annual for 1/4 of the monitoring stations each report*

MONITORING RESPONSIBILITY. *Forest Hydrologist*

REPORTING RESPONSIBILITY. *Forest Watershed Staff Officer*

FOREST MONITORING PLAN WORKSHEET

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ISSUE: *Riparian Area Cumulative Effects*

ESTIMATED COST OF MONITORING \$1,600 per year

PRECISION: *M*

RELIABILITY *L*

REMARKS

- *A few individual transect locations will probably be part of the same network used for Peakflow Cumulative Effects monitoring*
- *The distinction between this issue and the Range Vegetation Condition issue is that this cumulative effects monitoring will last for decades, and the Range Vegetation Condition monitoring will be stopped when each allotment reaches the condition standards*
- *This monitoring will not adequately assess effectiveness of timber sale riparian management due to the small sample size (16 measurement locations); the Issue, Water/Riparian -- Implementation and Effectiveness of S&G and BMP's is where T.S. riparian management will be assessed*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Low Flow Cumulative Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain water quantity*

MANAGEMENT AREAS AFFECTED *All watersheds large enough to show streamcourse existence symbols on U S Geological Survey topographic maps*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9

MONITORING QUESTIONS:

*Is streamflow produced in May through September being reduced?*

THRESHOLD OF VARIABILITY *No variability is allowed -- the nature of long-term cumulative effects monitoring requires immediate evaluation or corrective action if S&G and BMP's are not being met*

SUGGESTED SAMPLING METHODS

*Compile streamflow records maintained by U S Geological Survey and other agencies. Perform statistically adequate analyses for the purpose of determining if May through September low streamflows have been reduced.*

MONITORING FREQUENCY: *Monitoring (recording data) by these agencies is continuous*

REPORTING FREQUENCY: *Every 3 years*

MONITORING RESPONSIBILITY: *Forest Hydrologist*

REPORTING RESPONSIBILITY: *Forest Watershed Staff Officer*

ESTIMATED COST OF MONITORING: *\$400 per year*

PRECISION *H*

RELIABILITY: *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Peakflow Cumulative Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Prevent or reduce damaging peak flows*

MANAGEMENT AREAS AFFECTED *All watersheds large enough to show streamcourse existence symbols on U.S Geological Survey topographic maps*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 3 = RISK INDEX 6

## MONITORING QUESTIONS

- 1) *Is timber harvesting being patterned and scheduled to minimize the potential for adverse cumulative change in stream peakflows? Are standards and guidelines and BMP's being implemented correctly?*
- 2) *In watersheds where timber harvesting is influencing peakflows, is stream channel stability being maintained at 100% of potential (in riparian areas where other stability influences have been isolated out)*

THRESHOLD OF VARIABILITY. *Evidence that S&G's and BMP's are not being met or that stream channel stability is being reduced as a result of management induced peak flow increases.*

## SUGGESTED SAMPLING METHODS.

- *Streams in watersheds with low riparian area impact by livestock but full scale timber harvesting will have permanently located transect sites. Measurements will be made for channel profile, sediment deposits and other parameters necessary for interpretation of possible channel or sediment changes. Some of these measurement sites will need permanent 1 acre livestock exclosure fences. Approximately 12 permanent sampling areas will be established.*
- *If there is no significant average channel profile or sedimentation change over long periods, then it can be inferred that peakflow management practices are correct. Correlate absence of damage to percent peakflow change predicted by hydrologic models*
- *If significant changes show up, further and more refined monitoring will have to be designed to isolate harvesting induced changes from other possible causes such as extreme natural hydrologic events*

MONITORING FREQUENCY. *Each location will be measured once every 4 years, and be tracked over duration of many decades*

REPORTING FREQUENCY *Annual for 1/4 of the monitoring stations each report*

MONITORING RESPONSIBILITY *Forest Hydrologist*

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ISSUE *Peakflow Cumulative Effects*

REPORTING RESPONSIBILITY *Forest Watershed Staff Officer*

ESTIMATED COST OF MONITORING *\$1,500 per year*

PRECISION: *L*

RELIABILITY: *L*

REMARKS: *36 CFR 219 as(k), 219 23(d), 219 27(A)4*

*A few individual transect locations will probably be part of the same network used for riparian area cumulative effects monitoring.*



## FOREST MONITORING PLAN WORKSHEET

ISSUE *Soil Productivity*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain or enhance soil productivity.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT· COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

### MONITORING QUESTIONS

*Is soil production being adequately protected (at least 80% of an activity area is not in a detrimentally impacted condition)?*

THRESHOLD OF VARIABILITY· *Total monitored acres for all damage classes will be within one confidence interval (probability of D-1) and a one-tailed t-test will be used to determine whether conditions following an activity are equal to or less than planned objectives.*

### SUGGESTED SAMPLING METHODS

*Quantitative sampling (Ref· FSM 2520 R-6 Supplement) on at least one project every year using procedures in "guidelines for sampling some physical conditions of surface soils," or other appropriate techniques. Ocular evaluation, by a soil scientist of at least one project annually, per affected Ranger District*

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY *Annually*

MONITORING RESPONSIBILITY· *Forest Soil Scientist*

REPORTING RESPONSIBILITY· *Forest Watershed Staff Officer*

ESTIMATED COST OF MONITORING *\$1,250 per year*

PRECISION· *M*

RELIABILITY· *M*

REMARKS· *Long-term effects of various activities on soil productivity are not completely understood. Continue to work with agencies and universities to reduce the knowledge gap.*

*36 CFR 219.12(k), 219.27*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Old-Growth Forest*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain the amount, size, and distribution of old-growth forest stands specified in the Forest Plan*

*Provide key feeding and nesting habitat units to maintain viable population numbers of pileated woodpeckers, pine martens, and other species with similar habitat requirements.*

MANAGEMENT AREAS AFFECTED *All management areas with old-growth forests (161,500 acres), with emphasis on Management Area 15 (38,500 acres).*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be severe biologically, costly economically and severe politically Likelihood of error may be large due to limited resource availability, large due to the state of management knowledge for managing the hazards to highly fragmented habitat units, and large due to lack of knowledge of all the elements integral to the function of old-growth units.*

### MONITORING QUESTIONS

- 1) *Are the 161,500 acres of old-growth habitat available and suitable for use by pileated woodpeckers, pine marten, goshawk, and other dependent species?*
- 2) *Are the number, size, and spacing of areas identified in the plan being maintained?*
- 3) *Are the prescribed conditions of old-growth units within the accepted range of variability for old-growth units?*
- 4) *Are the specified pileated woodpecker feeding areas designated and to standard?*

THRESHOLD OF VARIABILITY. (by monitoring question)

- 1) *Loss of any designated old-growth stand*
- 2) *More than 10% of the directed pileated woodpecker feeding areas are not to standard of designation, juxtaposition, and/or trees per acre*

SUGGESTED SAMPLING METHODS (by monitoring question)	REPORT PERIOD (YEARS)
1) <i>Inventory and describe all designated and identified old-growth units and selected pileated woodpecker feeding units</i>	<i>Complete in 3 years</i>
2) <i>Track project activities, including insect infestations and fires, that may compromise the integrity of old-growth units or selected feed areas</i>	<i>Annual review 5 year report</i>
3) <i>Visit every identified unit within each 5 years and qualify the base-line description, inventory for MR and MIS species</i>	<i>Annual increment and 5 year report</i>

FOREST MONITORING PLAN WORKSHEET

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ISSUE. *Old-Growth Forest*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *3 years to base-line, 5 year periodic reports*

MONITORING RESPONSIBILITY *District TMA's, (supported by Wildlife Biologist)*

REPORTING RESPONSIBILITY. *Fish and Wildlife Staff Officer*

ESTIMATED COST OF MONITORING: *\$22,500 each year first 3 years, \$11,500 per year for subsequent years.*

PRECISION *M*

RELIABILITY *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Pileated Woodpecker Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *To maintain viable populations of pileated woodpeckers.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be moderate biologically, high economically, and significant politically, therefore judged on 3 for this purpose. Likelihood of error is significant due to the dispersion of elements in this consideration and the number of people and biological factors involved.*

MONITORING QUESTIONS.

- 1) *Are pileated woodpeckers using the provided old-growth habitat and feeding areas as planned?*
- 2) *What is the trend of populations?*

THRESHOLD OF VARIABILITY:

- 1) *There is a greater than 10% variance from expectations in pileated woodpecker occupancy, use, or production, on a 5-year average*
- 2) *Populations are on a downward trend*

SUGGESTED SAMPLING METHODS

REPORT PERIOD  
(YEAR)

- 1) *Through cooperation with ODF&W and other agencies or organizations, cooperatively build, predictive models and field sample populations to selected standard*

Annual effort with  
5-year report

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual increments and 5-year summary*

MONITORING RESPONSIBILITY: *District and Zone Biologists*

REPORTING RESPONSIBILITY: *Forest Fish and Wildlife Program Manager*

ESTIMATED COST OF MONITORING *\$17,000/yr for first 2 years and \$7,000/yr thereafter*

PRECISION: *M*

RELIABILITY *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Goshawk Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To maintain viable or higher populations of goshawks*

MANAGEMENT AREAS AFFECTED *All forested management areas*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be high biologically, moderate economically, and politically. The cost of failure can easily result in a reduced population. The limits of population viability have not been established for goshawks. The likelihood of error is high due to the fragmented nature of most of the suitable nesting habitat, and the variety of hazards to both other habitat and the animals.*

## MONITORING QUESTIONS.

- 1) *Are goshawks using provided old-growth habitat or nesting habitat in other allocations where considerations allow?*
- 2) *Are the encompassing habitats providing adequate prey bases for goshawks?*
- 3) *Is the population of goshawks at or above the expected level given the levels of habitat consideration prescribed?*
- 4) *Are the reproductive parameters of goshawks at or above population sustaining levels (i.e., young per nesting attempt greater than 2.1, less than 3% of breeding females are subadult, etc)?*

## THRESHOLD OF VARIABILITY.

- 1) *There is a greater than 10% variance from expectations in goshawk occupancy, use, or production on a 5-year average*
- 2) *A 20% or greater shift in prey used over a 5-year average*
- 3) *A greater than 10% deviation in predictability of goshawk nest site occurrence on a 3-year average*

## SUGGESTED SAMPLING METHODS\* (by question)

- 1) *In cooperation with ODF&W and other interested organizations or agencies, search for and verify nest site occupancy*
- 2) *Systematic collections and analysis of prey remains under cooperative arrangement with ODF&W*
- 3) *Assist ODF&W to monitor reproductive success parameters that relate to effectiveness of habitat management*

FOREST MONITORING PLAN WORKSHEET

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ISSUE: *Goshawk Populations*

MONITORING FREQUENCY *Continuous effort*

REPORTING FREQUENCY: *Five years*

MONITORING RESPONSIBILITY *District and Zone Biologists*

REPORTING RESPONSIBILITY *Forest Fish and Wildlife Program Manager*

ESTIMATED COST OF MONITORING. *\$7,000 annually*

PRECISION *M*

RELIABILITY *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Pine Marten Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Maintain viable or higher populations of pine marten*

MANAGEMENT AREAS AFFECTED *All forested management areas*

RISK ASSESSMENT· COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error may be severe biologically, costly economically and politically. The cost of failure can easily result in a reduced population. The limits of population viability have not been established for pine martens. The likelihood of error is high due to the fragmented nature of much of the most suitable habitat, and the variety of hazards to both the habitat and the animals.*

### MONITORING QUESTIONS

- 1) *Are the old-growth habitats, subalpine forest, and uneconomic lodgepole pine areas suitable and available and used by pine marten as planned?*
- 2) *Are the reproductive parameters and population demographics of pine martens indicative of stable or improving habitat conditions?*

### THRESHOLD OF VARIABILITY:

- 1) *More than 10% of the identified pine marten habitat is unused within the expected distributional and use zones including active Forest management activities.*
- 2) *More than 20% variance from accepted norms for reproductive parameters. More than 20% variance from anticipated distributions.*

### SUGGESTED SAMPLING METHODS· (by question)

- 1) *Establish and read a system of sampling points for summer and/or winter occurrence and use*
- 2) *Cooperate with ODF&W on a sample design to determine some normal ranges and departures from that*

MONITORING FREQUENCY *Continuous effort with annual and five year reports*

REPORTING FREQUENCY: *Annual and five year periods*

MONITORING RESPONSIBILITY: *District and Zone Biologists*

REPORTING RESPONSIBILITY *Fish and Wildlife Program Manager*

FOREST MONITORING PLAN WORKSHEET

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ESTIMATED COST OF MONITORING: *\$7,000 per year*

PRECISION: *M*

RELIABILITY: *M*



## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Dead and Defective Tree (DDT) Habitat and Primary Cavity Excavators*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Meet or exceed the minimum numbers, sizes, and distribution of dead and defective trees and logs, to meet direction in the FLRMP, and habitat capability objectives of primary cavity excavators.*

MANAGEMENT AREAS AFFECTED *All Management Areas.*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS.

- 1) *Are dead and defective trees, and logs being managed in sufficient numbers, distribution, and sizes to meet FLRMP direction?*
- 2) *Are Management Indicator Species (primary cavity excavators) occupying the DDT habitat as predicted?*

THRESHOLD OF VARIABILITY:

- 1) *More than 10% of the surveyed areas have less than 90% of the minimum prescribed dead and defective trees, snags and logs*
- 2) *Expected primary cavity excavators are absent from more than 10% of the surveyed sites, or are at 80% or less of predicted numbers*

SUGGESTED SAMPLING METHODS (by question)	REPORT PERIOD (YEARS)
1) <i>Examine habitat on 20% of timber sales within one year of sale closure per district</i>	<i>Annual</i>
<i>Evaluate timber inventory plot data each ten year period</i>	<i>10 yr report</i>
<i>Establish and measure transects to measure longevity of snags in areas where fuelwood is gathered</i>	<i>Bi-annually</i>
2) <i>Conduct surveys to determine if the expected primary excavators are occupying the habitat</i>	<i>Annual survey 5 yr report</i>

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY: *Project impact accountability - Annually & semi-annually Primary cavity excavator response - 5 year reports*

MONITORING RESPONSIBILITY *Monitoring Question #1 - District Timber Staff Monitoring Question #2 - District Wildlife Staff*

FOREST MONITORING PLAN WORKSHEET

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ISSUE. *Dead and Defective Tree (DDT) Habitat and Primary Cavity Excavators*

REPORTING RESPONSIBILITY. *Forest Wildlife Program Manager*

ESTIMATED COST OF MONITORING: *\$8,000 (wildlife P&M), note supporting efforts and contributions of SSF, KV and P&M sale prep programs*

PRECISION· *H*

RELIABILITY· *M*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Elk Habitat/Populations*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Provide near-optimum hiding cover, thermal cover, and forage conditions on big-game winter ranges and selected summer ranges*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS.

*Are standards and guidelines for hiding cover, thermal cover, forage, and open-road density being applied appropriately?*

*Are elk populations approximately as projected?*

THRESHOLD OF VARIABILITY. *Failure to implement Forest Plan standards and guidelines correctly*

*Elk populations are +/- 15% from projections and differences are attributable to Forest activities.*

SUGGESTED SAMPLING METHODS

*Timber sale reviews, EA reviews*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY.

REPORTING RESPONSIBILITY: *Wildlife Staff Officer*

ESTIMATED COST OF MONITORING: *\$5,000*

PRECISION: *H*

RELIABILITY. *H*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: Bald Eagles: *Nesting Habitat, Winter Roost Habitat and Critical Feeding Habitat*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To protect and manage habitat for the perpetuation and recovery of bald eagles.*

*To participate in re-establishing eight pairs of bald eagles in the Blue Mountains and Snake River recovery zones*

*To identify and manage for continued utility, all winter roosts on NF land*

*To identify and manage critical winter feeding areas and food resources on NF lands, to maintain utility and use by bald eagles.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error is primarily biological Likelihood of error is largely due to the currently limited knowledge*

### MONITORING QUESTIONS:

- 1) *Are all nesting, communal roosting, and associated foraging habitats being identified?*
- 2) *Are individual site management plans (nest sites, roost sites and critical winter feeding sites) being developed and adhered to as sites are identified?*
- 3) *Are potential habitats being identified and planned for to assure species recovery?*
- 4) *Are the "young per occupied territory" goals (1.00) being met by our increment of nest sites?*

### THRESHOLD OF VARIABILITY.

- 1) *A single nest or roost site is compromised due to Forest Service activities.*
- 2) *Two years or more from time of discovery to complete an approved site management plan.*
- 3) *0 90 young per occupied territory, for all occupied territories under our management, in any given 5 year period*

SUGGESTED SAMPLING METHODS (by question)  
*See also action plan for TE&S species mgt in Forest Plan*

REPORT PERIOD  
(YEARS)

- |  |               |
|--|---------------|
| 1) <i>Periodic roost counts and nest site observations.</i>                            | Annual report |
| 2) <i>Review of site plan development progress and ground review of planned sites.</i> | Annual report |

FOREST MONITORING PLAN WORKSHEET

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ISSUE: *Bald Eagles* · *Nesting Habitat, Winter Roost Habitat and Critical Feeding Habitat*

- |    |   |                      |
|----|---|----------------------|
| 3) | <i>Review of site plan development progress</i> | <i>Annual report</i> |
| 4) | <i>Nest site observations, to fledging</i>      | <i>Annual report</i> |

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY *District/Zone Biologists*

REPORTING RESPONSIBILITY · *Forest Wildlife Program Manager*

ESTIMATED COST OF MONITORING *Cost are reflected in action plan for TE&S species mgt in Forest Plan*

PRECISION: *H*

RELIABILITY: *H*

## FOREST MONITORING PLAN WORKSHEET

ISSUE. *Peregrine Falcon Reintroduction Sites and Nesting Habitats*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To protect and manage habitat for the perpetuation and recovery of peregrine falcon*

*To participate in re-establishing 4 pairs of peregrine falcons, in northeast Oregon, to successful natural nesting*

MANAGEMENT AREAS AFFECTED. *All (primary zones are in the vicinity of cliffs)*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 3 = RISK INDEX 9  
(NARRATIVE DISCUSSION OF RISK ASSESSMENT)

*Cost of error is primarily biological, and we are in recovery now Likelihood of error is largely due to currently incomplete habitat inventory and the lack of site specific management plans*

MONITORING QUESTIONS.

- 1) *Are nesting and associated foraging habitats being identified?*
- 2) *Are individual nest site management plans being developed and adhered to?*
- 3) *Are potential nest habitats identified and being managed to maintain suitability?*
- 4) *Are the "young per occupied territory" goals (1 5) being met by our increment of nest sites?*

THRESHOLD OF VARIABILITY

- 1) *Plus or minus 20% off the Forest Land and Resource Management Plan "Multi-Year Action Plan" for TE&S species mgt*
- 2) *Any lag time in developing individual site management plans for reintroduction sites or active nests.*
- 3) *1 35 young per occupied territory, for all occupied territories under our management, in any given 5 year period*

SUGGESTED SAMPLING METHODS. (by question)  
*See also action plan for TE&S species mgt in Forest Plan*

REPORT PERIOD  
(YEARS)

- |  |   |
|--|---|
| 1) <i>Review the progress of survey for re-occupancy of historic and high potential nesting habitats</i>                                 | <i>Annual report</i>                                    |
| 2) <i>Review the progress of developing individual site management plans, and ground review of activities within those planned areas</i> | <i>Annual report<br/>Continuous<br/>project reviews</i> |
| 3) <i>Review of progress in identifying and rating potential nesting habitats</i>  | <i>Annual report</i>                                    |
| 4) <i>Conduct and/or coordinate nest site observations until fledging</i>  | <i>Annual report</i>                                    |

FOREST MONITORING PLAN WORKSHEET

Page 2 of 2

ISSUE: *Peregrine Falcon Reintroduction Sites and Nesting Habitats*

MONITORING FREQUENCY. *Annual for reporting purposes, continuous for project reviews and coordination*

REPORTING FREQUENCY *Annual*

MONITORING RESPONSIBILITY *District/Zone Biologists*

REPORTING RESPONSIBILITY. *Forest Wildlife Program Manager*

ESTIMATED COST OF MONITORING: *Costs are reflected in action plan for TE&S species mgt in Forest Plan*

PRECISION: *H*

RELIABILITY: *H*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Fisheries*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Maintain or improve anadromous and resident fish habitat*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS

*What are the cumulative effects of activities, in the watersheds of the Forest, on anadromous and resident fish habitat and populations?*

*Are fisheries habitat condition and trend being maintained or improved so as to meet Forest Plan objectives?*

THRESHOLD OF VARIABILITY: *Decrease in habitat capability or fish populations in a watershed or subwatershed*

SUGGESTED SAMPLING METHODS (by question)

*Develop baseline stream habitat/riparian data using Region 6 Standard Stream survey methods which incorporate the Reeves and Hankins method of stream survey.*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY. *5 years*

MONITORING RESPONSIBILITY *Fisheries Biologist*

REPORTING RESPONSIBILITY *Range, Watershed, Wildlife Staff Officer*

ESTIMATED COST OF MONITORING *\$18,000 per year*

PRECISION *M*

RELIABILITY *M*

REMARKS *36 CFR 219 12, 219 19 This is a Forest and Regional issue*



FOREST MONITORING PLAN WORKSHEET

ISSUE: *Mineral Development and Rehabilitation*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *To provide for exploration, development, and production of a variety of minerals in coordination with other resources, and ongoing rehabilitation of mine sites*

MANAGEMENT AREAS AFFECTED. *All except 4, 8-11*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS:

*Are the standards and guidelines for mineral operations reasonable and effective? Are they being implemented correctly?*

THRESHOLD OF VARIABILITY. *Standards and Guidelines are unreasonable or ineffective in meeting goals, or are not being implemented correctly.*

SUGGESTED SAMPLING METHODS:

*Review and evaluate 50 percent of operating plans each year.*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY *Forest Minerals Geologist, District Rangers*

REPORTING RESPONSIBILITY *Recreation, Lands, Minerals Staff Officer*

ESTIMATED COST OF MONITORING \$40,000

PRECISION: *H*

RELIABILITY: *H*

REMARKS: *36 CFR 219.12(k)*

*36 CFR 228*

*Chief's Policy (FSM Zero Code) on minerals administration 9/15/89*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Wilderness*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Manage these areas in accordance with the values specified in the Wilderness Act of 1964 and the Oregon Wilderness Act of 1984*

MANAGEMENT AREAS AFFECTED. *4*

RISK ASSESSMENT. COST OF ERROR *2* X LIKELIHOOD OF ERROR *3* = RISK INDEX *6*

MONITORING QUESTIONS:

*Are wildernesses being managed in accord with the Wilderness Act (P L. 88-577) as amended*

*Are the physical/biological, social, and managerial settings of each WROS Class maintained within the levels outlined in the standards and guidelines, and R-6 Supplement No 81 to FSM 2320?*

THRESHOLD OF VARIABILITY *Failure to implement Forest Plan standards and guidelines correctly*

SUGGESTED SAMPLING METHODS.

*Evaluate established monitoring locations for changes (e.g , water quality, vegetation, air quality, visitor interactions).*

*Evaluate wilderness/low impact education activities*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *Annual*

MONITORING RESPONSIBILITY *District Rangers*

REPORTING RESPONSIBILITY *Recreation Staff Officer*

ESTIMATED COST OF MONITORING \$15,000

PRECISION *M*

RELIABILITY. *M*

REMARKS: *The Chief's Policy (FSM 2320 3) requires that each wilderness area be managed under a policy of nondegradation. The annual monitoring report is part of the annual wilderness report to Congress (FSM 2327 1).*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Wild and Scenic Rivers*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Preserve the wild, scenic, and recreational characteristics of those rivers or river segments which are part of the National Wild and Scenic Rivers System*

MANAGEMENT AREAS AFFECTED: 7, 8

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS

*Are the designated wild, scenic, and recreational rivers being managed in accord with the Wild and Scenic Rivers Act of 1968, the Omnibus Oregon Wild and Scenic Rivers Act of 1988, Public Law 94-199 (Snake River), and the Forest Plan Standards and Guidelines?*

THRESHOLD OF VARIABILITY *Failure to meet law, or direction in the Forest Plan or river management plans.*

SUGGESTED SAMPLING METHODS:

*Annual field observations as specified in river management plans.*

*Formal Forest review of compliance for each river every 5 years.*

MONITORING FREQUENCY. *Continuous*

REPORTING FREQUENCY: *5 years*

MONITORING RESPONSIBILITY: *District Rangers*

REPORTING RESPONSIBILITY *Recreation Staff Officer*

ESTIMATED COST OF MONITORING *\$15,000*

PRECISION. *H*

RELIABILITY *H*

REMARKS *River plans are scheduled for completion in 1992*

## FOREST MONITORING PLAN WORKSHEET

ISSUE *Recreation Setting*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Maintain a semiprimitive social and physical setting showing little or no evidence of human activity and meeting the needs of people seeking a place where there is little interaction with other users. Encourage, establish and sustain a diverse, balanced, and stable range of recreation services and facilities on the Forest*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR *2* X LIKELIHOOD OF ERROR *3* = RISK INDEX *6*

MONITORING QUESTIONS:

*Are Forest settings with desirable recreation attributes being managed to provide high quality and stable opportunities for outdoor recreation*

*Are the setting indicators of access, nonrecreation use impacts, social encounters, facilities, and visitor management maintained, at the levels desired in the standards and guidelines?*

THRESHOLD OF VARIABILITY *Failure to meet standards and guidelines for high quality recreation opportunities within each ROS class*

SUGGESTED SAMPLING METHODS.

*Monitor recreation use by activity, location and interaction with others Compare findings with ROS objectives (standards and guidelines).*

*Monitor proposed nonrecreation projects for potential impacts to recreation resources*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY: *2 years*

MONITORING RESPONSIBILITY: *District Rangers*

REPORTING RESPONSIBILITY: *Recreation Staff Officer*

ESTIMATED COST OF MONITORING *\$20,000*

PRECISION: *M*

RELIABILITY: *H*

REMARKS. *This is a Forest and Regional issue*

FOREST MONITORING PLAN WORKSHEET

ISSUE *Off-Road Vehicle (ORV) Use*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Manage ORV use to provide for recreation opportunity in a manner consistent with other resource management objectives*

MANAGEMENT AREAS AFFECTED *All except 4, 12*

RISK ASSESSMENT. COST OF ERROR 2 X LIKELIHOOD OF ERROR 2 = RISK INDEX 4

MONITORING QUESTIONS.

*Are Forest settings with desirable recreation attributes being managed to provide high quality and stable opportunities for ORV use?*

*Is ORV use conflicting with other recreation or other resource management objectives?*

*Is management meeting the intent of the Forest Plan Standards and Guidelines?*

*Are corrective actions being taken to resolve problems as provided for in the Forest Plan?*

THRESHOLD OF VARIABILITY *Failure to meet standards and guidelines*

SUGGESTED SAMPLING METHODS:

*Monitor ORV use by type, location, interaction with others, and impacts on other resources, compare findings with ROS objectives (standards and guidelines)*

*Monitor both recreation and nonrecreation projects for potential impacts to ORV activities.*

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY *2 years*

MONITORING RESPONSIBILITY. *District Rangers*

REPORTING RESPONSIBILITY: *Recreation Staff Officer*

ESTIMATED COST OF MONITORING: *\$10,000*

PRECISION: *M*

RELIABILITY. *H*

REMARKS. *36 CFR 295.1*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Visual Resource Objectives*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Manage viewsheds to meet the visual quality objectives defined in the Forest Plan*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT. COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

MONITORING QUESTIONS:

*Are the visual quality objectives for projects adopted in the Forest Plan being achieved?*

*Are related standards and guidelines being implemented and do they achieve stated goals and objectives?*

*Do the cumulative effects of all resource activities within a viewshed meet the desired visual condition?*

THRESHOLD OF VARIABILITY: *Failure to meet standards and guidelines*

SUGGESTED SAMPLING METHODS: (by question)

*Annual interdisciplinary review of at least two projects per year*

*Monitor (visit) 20 percent of all major project areas per year.*

*Conduct a summary viewshed analysis in the last half of the plan decade*

MONITORING FREQUENCY: *Continuous*

REPORTING FREQUENCY. *Annual*

MONITORING RESPONSIBILITY. *District Rangers/Forest Landscape Architect*

REPORTING RESPONSIBILITY: *Recreation Staff Officer*

ESTIMATED COST OF MONITORING: *\$10,000*

PRECISION. *M*

RELIABILITY: *M*

FOREST MONITORING PLAN WORKSHEET

ISSUE: *Cultural and Historic Site Protection and Rehabilitation and Interpretation*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *To provide for the identification, protection, preservation, enhancement, and interpretation of cultural resources*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR <sup>3</sup> X LIKELIHOOD OF ERROR <sup>2</sup> = RISK INDEX <sup>6</sup>

MONITORING QUESTIONS:

*Are the National Register characteristics of unevaluated and significant cultural resource properties being protected as stated in the Forest Plan?*

*Is appropriate stabilization, rehabilitation, or mitigation of damaged sites eligible for inclusion in the National Register of Historic Places being done as stated in the Forest Plan?*

*Are survey methods adequate to identify all locatable sites?*

*Where appropriate, are cultural resources being interpreted for the public?*

THRESHOLD OF VARIABILITY: *Failure to adequately protect any significant cultural resource property or unevaluated site.*

SUGGESTED SAMPLING METHODS:

*Monitor (visit) 100% of all significant sites in active project areas prior to close of contract.*

*Monitor (visit) 100% of all unevaluated sites in active project areas prior to close of contract.*

*Monitor 100% of the update reports on (1) the condition of significant sites and (2) the measures to mitigate damaged sites*

*Annually monitor one or more project areas after ground-disturbing activities have been completed to compare with preproject survey findings (to determine adequacy of initial survey findings).*

MONITORING FREQUENCY *Continuous*

REPORTING FREQUENCY. *2 years*

MONITORING RESPONSIBILITY. *District Rangers/Forest Archaeologist*

REPORTING RESPONSIBILITY *Recreation Staff Officer*

ESTIMATED COST OF MONITORING: *\$50,000*



PRECISION. *H*

RELIABILITY: *H*

REMARKS. *36 CFR 800*

FOREST MONITORING PLAN WORKSHEET

ISSUE. *Budgets*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Full funding of all resource programs and activities including monitoring.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR *3* X LIKELIHOOD OF ERROR *2* = RISK INDEX *\**

MONITORING QUESTIONS.

*Are the annual programs and budgets needed to implement the Forest Plan being realized?*

THRESHOLD OF VARIABILITY *Budget more than 10% different from what is needed -- 3 year average.*

SUGGESTED SAMPLING METHODS

*Annually monitor budgets and programs of work in relationship to the levels needed to implement the Forest Plan. Compare actual budget in preceding three years with budget needed for Plan implementation*

MONITORING FREQUENCY *Annual*

REPORTING FREQUENCY *Annual*

MONITORING RESPONSIBILITY *Administrative Officer*

REPORTING RESPONSIBILITY *Administrative Officer*

ESTIMATED COST OF MONITORING *\$1,000*

PRECISION *H*

RELIABILITY. *H*

## FOREST MONITORING PLAN WORKSHEET

ISSUE. *Costs and Values*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS: *Verify that projected costs and values approximate actual costs and values.*

MANAGEMENT AREAS AFFECTED: *All*

RISK ASSESSMENT.  $\text{COST OF ERROR } 2 \times \text{LIKELIHOOD OF ERROR } 2 = \text{RISK INDEX } 4$

MONITORING QUESTIONS

*Are the major costs and values used in the Forest Plan analysis in line with actual implementation costs, and present values being realized?*

THRESHOLD OF VARIABILITY. *Plus or minus 25%*

SUGGESTED SAMPLING METHODS: (by question)

*Monitor Forest financial records and accomplishment reports to determine average annual costs for all major resource activities*

*Monitor timber cut and sold reports and RPA values to determine current values*

*Monitor payments to local governments*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY *3 years*

MONITORING RESPONSIBILITY: *Planning Staff Officer*

REPORTING RESPONSIBILITY: *Planning Staff Officer*

ESTIMATED COST OF MONITORING. *\$3,000 per year*

PRECISION: *H*

RELIABILITY *H*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Community Effects*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS *Economic and social effects are in line with actual effects.*

MANAGEMENT AREAS AFFECTED *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

### MONITORING QUESTIONS

- 1 *Are Forest-related jobs and personal income approximately as projected in the Plan?*
- 2 *Are local population trends approximately as projected?*
- 3 *Are payments to local governments approximately as projected?*
4. *Are changes in lifestyles, attitudes, beliefs, or values occurring more quickly than expected, related to Forest activities, and adversely affecting local communities?*

### THRESHOLD OF VARIABILITY:

*For 1, 2, and 3, changes are +/- 15% from projected*

*For 4, Forest-related changes are determined to be significant and adverse.*

### SUGGESTED SAMPLING METHODS. (by question)

*For 1, 2, and 3 - Review U. S Census, State publications, local agency reports, and Forest Service reports.*

*For 4 - Interview key publics and local leaders*

MONITORING FREQUENCY: *Annual*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY *Planning Staff Officer*

REPORTING RESPONSIBILITY: *Planning Staff Officer*

ESTIMATED COST OF MONITORING *\$5,000 per year*

PRECISION *H*

RELIABILITY *H*

## FOREST MONITORING PLAN WORKSHEET

ISSUE: *Effects on land and resources adjacent to the Forest including land managed by other federal or other government agencies including local governments*

FOREST GOALS, DESIRED FUTURE CONDITION, OUTPUTS. *Verify that adjacent lands are not adversely affected by National Forest activities.*

MANAGEMENT AREAS AFFECTED. *All*

RISK ASSESSMENT: COST OF ERROR 3 X LIKELIHOOD OF ERROR 2 = RISK INDEX 6

### MONITORING QUESTIONS

*Are adjacent and nearby lands being adversely affected by Forest Management activities?*

THRESHOLD OF VARIABILITY: *Any indication of significant adverse effects on local communities or adjacent lands attributable to National Forest activities.*

### SUGGESTED SAMPLING METHODS:

*Interviews with local land owners, city and county officials, state agency officials and other federal agency officials*

MONITORING FREQUENCY: *3 years*

REPORTING FREQUENCY: *3 years*

MONITORING RESPONSIBILITY: *Planning Staff Officer*

REPORTING RESPONSIBILITY: *Planning Staff Officer*

ESTIMATED COST OF MONITORING *\$3,000 per year*

PRECISION: *M*

RELIABILITY: *M*

# *APPENDIX A*

## Detailed Schedules of Projected Activities



## APPENDIX A

### DETAILED SCHEDULES OF PROJECTED ACTIVITIES

This appendix contains the schedule of proposed projects for the Forest Plan.

**TABLE A-1**

#### FISHERIES HABITAT IMPROVEMENT PROJECTS

District	Project	Year	Funding	Output	Cost (M\$)
La Grande	Fly Ridge	1991	KV	35 Structures	36
La Grande	Huckleberry	1991	KV	4 mile fence	9
La Grande	Five Point Creek	1991	PM	1 plan	5
La Grande	McCoy Creek	1991	PM	1 plan and design	2
Baker	Deer Creek Riparian Improvement	1991	PM	2 miles	10
Baker	North Fork John Day River Streams	1991	BPA	Structure	95
Baker	Phillips Fish Habitat	1991	PM	5 structures	1
Baker	Phillips Trail Plan	1991	PM	1 plan	15
Unity	South Fork Burnt River	1991	PM	2 miles	5
Unity	North Fork Burnt River Riparian Improvement .207	1991	PM	1 plan and design	5
Unity	West Fork Burnt River Riparian Improvement 206	1991	KV	2 miles	30
Unity	Trout Creek	1991	KV	1 mile	10

## Appendix A

District	Project	Year	Funding	Output	Cost (M\$)
Pine	Eagle Creek Handicap Access	1991	PM	1 structure	5
Pine	Little Eagle Creek	1991	PM	1 plan and EA	3
Wallowa Valley	Swamp Creek (Prop)	1991	KV	35 structures	21
Wallowa Valley	Swamp Creek (Nells Canyon)	1991	KV	36 acres Vegetation plant	12
Wallowa Valley	Echo (Nells Canyon)	1991	KV	40 structures	14
La Grande	Fly Ridge (Nells Canyon)	1992	KV	35 structures	7
La Grande	Antler	1992	KV	30 structures	37
La Grande	Collins Creek	1992	KV	4 miles	5
La Grande	McCoy Creek (Nells Canyon)	1992	BPA	2 miles	8
La Grande	Five Points Creek	1992	PM	1 design	10
Baker	Deer Creek	1992	PM	2 miles	10
Baker	Cracker Creek	1992	PM	1 plan	2
Baker	Anthony Creek Fishing Trail	1992	PM	1 plan	1
Unity	South Fork Burnt River	1992	PM	20 structures	20
Unity	North Fork Burnt River	1992	KV	30 structures, 2 miles	40
Pine	Eagle Creek	1992	PM	1 plan	3
Pine	Little Eagle Creek	1992	PM	1 design	5
Wallowa Valley	Echo	1992	KV		6
Wallowa Valley	Swamp Creek (Nells Canyon)	1992	KV	18 acres Vegetation planting	9
La Grande	Camp Creek	1993	KV	220 structures	35



District	Project	Year	Funding	Output	Cost (M\$)
La Grande	Fly Ridge	1993	KV	53 structures	58
La Grande	Middle/Buck/Corral	1993	KV	3 miles	170
La Grande	Lucky Strike	1993	KV	4 miles	4
La Grande	Five Points Creek	1993	PM	2 miles	74
La Grande	McCoy	1993	BPA	2 miles	10
Baker	Cracker Creek	1993	PM	1 mile	15
Baker	Anthony Creek Fishing Trail	1993	PM	7 miles	20
Baker	Dutch Creek	1993	PM	1 plan	1
Unity	West Camp Creek	1993	PM	1 plan	1
Pine	Eagle Creek	1993	PM	1 interpretive display	3
Pine	Little Eagle Creek	1993	PM	1 mile	37
Wallowa Valley	Echo	1993	KV	10 acres vegetative planting	5
La Grande	Fly Ridge	1994	KV	2 miles	5
La Grande	Five Points Creek	1994	PM	Maintenance	10
Baker	Cracker Creek	1994	PM	1 mile	15
Baker	Dutch Creek	1994	PM	1 mile	5
Baker	Elk Creek	1994	PM	1 plan	1
Baker	McCully Fork	1994	PM	1 plan	1
Unity	West Camp Creek	1994	PM	3 5 miles	28
Unity	Upper North Fork Burnt River	1994	KV	1 plan	2
Baker	Elk Creek	1995	PM	1.5 miles	8
Baker	McCully Fork	1995	PM	1 mile	10
Unity	Upper North Fork Burnt River	1995	PM	4 miles	32

**TABLE A-2**  
**ROAD-RELATED CAPITAL IMPROVEMENTS\***  
 (Exclusive of Bridges)

Project Name	Number	Estimated Road Cost (M\$)
Hat Point (II)	4240	1,100
Grande Ronde River (II)	51	1,700
Pittsburg Landing	493	968
Tanner Sale	Various	177
Swing Sale	Various	197
Burnt-Clear	2226	85
Lostine River	8210	179
Lookout Sale	Various	73
Potters Mill Sale	Various	65
Upper Wahoo-North Wind	Various	50
Miscellaneous Small Projects	Various	400
Elkhorn Drive	73	1,000
Dug Bar Road and Recreation site	4260	3,000
Marble Creek Pass	6510	200
Ladd Canyon	43	80
Huckleberry	77	360
Indian Creek	62	200
Boulevard Sale	Various	176
Rock Willow	Various	150
Warm Creek Sale	Various	235
Dug Bar (II)	4260	4,000
PSC Sale	Various	192
Ragged Marble Sale	Various	290
Low Saddle Road and Recreation site	2060	1,600
Chesnimnus	4625	95
Wellamotkin	46	175
Cantrell Springs Sale	Various	68
South Fork Burnt River	6005	160
East Fork Sale	Various	106
Sawpit Saddle	2060	143
McCubbin Creek	3021	175
Camp Creek	19	230
Smooth Marble	Various	500
Harl Butte	3930	75
Devil's Run	4690	120
Triangle Mountain Road and Recreation Site	420	2,000
Muddy Creek	Various	380
Fish lake	66	390
Summit Creek	4625	71
Wellamotkin	46	175
Sheep Creek Cutoff and Bridge	5184	200
South Shore BST	1170	80

**TABLE A-2 (Cont.)**  
**ROAD-RELATED CAPITAL IMPROVEMENTS\***  
 (Exclusive of Bridges)

Project Name	Number	Estimated Cost (M\$)
Indian Crossing	3960	600
Hurricane	8205	40
Mt. Emily	3120	175
East Fork Timber Sale	5138	106
La Grande Reservoir	4305270	175
Eagle Creek	77	400
Forshey Meadows	70	100
Idaho Access roads	420/2060/2062/1819	733
Swampy Timber Sale	43	192
Devils Run	4690	120
Camp Creek	19	230
McCarty	4670	44
Hells Canyon Overlook (I)	3965	400
Hells Canyon Overlook (II)	3965	3,200
Cold Springs Road and Recreation Site	4680	2,000
Heaven's Gate	517	4,900
Syrup Creek Timber Sale	Various	445
Perrine Loop	2105	20
Grande Ronde River (III)	51	2,400
Fisheries Improvement Projects	Various	320
Phillips Lake Chip Seal	1170,2230	80
Oregon Trail	3000600	97
Anthony-Ladd	43	350
Paddy Creek - Carson Section	77,7710	400
Olive	1305	100
Wallowa Mt. Scenic Byway - Pine Creek Section	39	1,300
Indiana Mine	4350	200
John Day Slide	73	100
Summit Point	7715	110
Wallowa Mt. Scenic Byway - Gumboot Section	39	5,100
Schneider Meadows	6610	220
East Camp	16	400
Hat Point Road and Scenic Overlook	4240	300
Crazyman Road and Bridge	4230	200

\* Additional Capital Investment Projects for roads and bridges may be developed as needs are identified. The total need for improvements to the road system is identified in the "Wallowa-Whitman NF INTERIM ROAD MANAGEMENT PLAN," dated 5/20/80. This document identifies the reconstruction needs for Arterials and major Collectors on the Forest. New construction needs beyond those listed above will be developed during project planning activities in areas which are presently unroaded. Funding for listed projects is dependent upon annual appropriations by Congress, and may vary from year to year.

TABLE A-3

## BRIDGES\*

Name	Number	Year for Cost (M\$)	Rough Cost Est.
<b>TRAIL BRIDGES</b>			
Goat Creek	1653-4 6	1996	\$18,000
East Fork Lostine	1662-5 0	1998	14,000
North Minam Meadows	1666-0 1	1994	25,000
North Minam Trail	1673-22 3	1996	22,000
Imnaha River Trail (3 bridges)	1713-4 0,1,2	1995	28,000
B C Creek	1803-1.0	1990	50,000
East Fork Wallowa River	1804-4 0	1996	21,000
Ice Lake Trail	1808-0 1	1997	44,000
West Fork Wallowa River	1810-0 1	1993	25,000
North Fork Imnaha	1816-6 8	1991	48,000
Little Minam No 1	1901-0 7	1996	41,000
Horseshoe Creek	1908-1 4	1995	21,000
Little Minam No 2	1908-4 5	1994	28,000
Horse Ranch Pack (Minam River)	1908-8 0	1996	70,000
Elk Creek Trail	1912-9 5	1992	30,000
Main Eagle Trail No 2	1922-2 1	1995	37,000
Main Eagle Trail No 4 and 5	1922-0 1	1996	60,000
Trail Creek	1931-9 6	1995	39,000
Slide Creek	1934-0 9	1994	14,000
Imnaha River Trail (new)	1713	1996	75,000
<b>ROAD BRIDGES</b>			
Lockhart (Powder River)	2200100-0 1	1993	75,000
College Crossing (Imnaha River)	4200200-0 1	1995	165,000
Wolf Creek	4315-6 6	1993	65,000
Chesnimnus Creek	46-13 8	1992	125,000
Peavine Creek	4625-4 5	1996	95,000
East Sheep Creek	5184-0 3	1994	50,000
Deer Creek	6540-0.6	1992	40,000
Clear Creek	6610-1 6	1997	45,000
Main Eagle Creek No 3	7015-4 6	1993	120,000
Post Office (Burn Creek)	7055-8 5	1992	65,000
N. Catherine Creek (Buck Creek)	7787-0 1	1993	80,000
Big Creek #1	67-0 2	1993	60,000
Crazyman	4230-0 3	1992	50,000

\* Additional Capital Investment Projects for roads and bridges may be developed as needs are identified. The total need for improvements to the road system is identified in the "Wallowa-Whitman NF INTERIM ROAD MANAGEMENT PLAN," dated 5/20/80. This document identifies the reconstruction needs for Arterials and major Collectors on the Forest. New construction needs beyond those listed above will be developed during project planning activities in areas which are presently unroaded. Funding for listed projects is dependent upon annual appropriations by Congress, and may vary from year to year.

**TABLE A-4**  
**TRAIL RELATED CAPITAL INVESTMENT NEEDS\***

Name	Number	Estimated Cost (M\$)	Tentative Year Planned
Spring Creek Interpretive Trail			
Partnership	1960	60	1990
Elk Creek Segment 2	1944	60	1990
Long Lake	1669	35	1990
Four Mile	1748	20	1990
Hidden Lake	1915	50	1990
Shore Line	1610	65	1990
Mt Emily Cost-Share	1844	155	1990
West Eagle Meadows Trailhead	1934	65	1990
ATV Cost-Share	9876	95	1991
Boulder Park Trailhead	1922	130	1992
Copia-Summit Trailhead	1865	162	1992
Buck Creek Trailhead	1944	130	1992
Flagstaff Loops	1923, 1926	90	1992
Hoffer Lake	1641	30	1993
Snake River Dug Bar	1726	145	1993
Shore Line	1610	90	1993
West Eagle Meadows Trailhead	1934	120	1993
Sparta Ditch	1870	150	1993
Mt Emily Face	1844	150	1993
Spring Cr Bike/Snopark	1840	180	1993
Martin Bridge Trail	1878	42	1993
West Spring Loops	686	80	1993
Oregon Trail	1842	500	1994
Fake Creek	1941	100	1994
North Catherine Trailhead	1905	125	1994
Rock Springs Trailhead	1928	50	1994
Snake River Idaho	102	50	1994

\* Additional Capital Investment Projects for trails, trailheads, and bridges may be developed as needs are identified. The listing above may be updated periodically due to changing priorities and funding levels.

The total need for improvements in the trail system is documented in the Trail Inventory and Development Plan. This document is updated annually and lists all trails on the Forest where construction or reconstruction is required to meet management objectives. Project needs beyond those listed will be developed during planning activities. Projects identified as having a higher priority than those listed may be substituted for a listed project or injected in the list as required.

**TABLE A-4 (Cont.)**  
**TRAIL RELATED CAPITAL INVESTMENT NEEDS\***

Name	Number	Estimated Cost (M\$)	Tentative Year Planned
Moss Spring Trailhead	1908	75	1994
Long Lake	1669	35	1994
Hidden Lake	1915	50	1995
Indian Rock and Trailhead	1648	175	1995
Glacier Lake Segment 2	1806	60	1995
Imnaha Fork Bridge	1816	25	1995
Dug Bar Trailhead	1774A	75	1995
Wood Lake	1659	30	1995
Medicine	1772	15	1996
Maxwell Lake	1674	50	1996
Kettle Creek Trailhead	1910	75	1996
Elk Creek Bridge	1944	30	1996
Power Line	1627	75	1996
Rock Creek Lake	1626	35	1996
Dry Diggins Idaho	56	25	1996
Frazier Pass	1947	65	1996
Bernard Lakes Idaho	57	50	1996
East Eagle	1910	50	1996
Two Pan Trailhead	1670	75	1996
Russel Mountain Trailhead	1887	75	1996
Copper Creek Trailhead	1879	200	1996
Cat Creek	1701	30	1996
Fivepoints Trail and Trailhead	1843	120	1996
Mt. Ireland Trailhead	1604	50	1996
East Fork Wallowa Bridge	1804	30	1996
Mountain Chief Mine Bridge	1728	40	1996

\* Additional Capital Investment Projects for trails, trailheads, and bridges may be developed as needs are identified. The listing above may be updated periodically due to changing priorities and funding levels.

The total need for improvements in the trail system is documented in the Trail Inventory and Development Plan. This document is updated annually and lists all trails on the Forest where construction or reconstruction is required to meet management objectives. Project needs beyond those listed will be developed during planning activities. Projects identified as having a higher priority than those listed may be substituted for a listed project or injected in the list as required.

**TABLE A-5**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

<b>Project Name</b>	<b>M\$ Cost</b>	<b>Year</b>	<b>Description</b>
Main Eagle (Boulder Park) Trailhead	38	1990	Relocation
Hat Point Road (II)	1,000	1990	Realignment and surfacing of access to the western rim of Hells Canyon
Southwest Shore Boat Ramp	20	1990/91	Phillips Lake -- co-op project with State Marine Board
Huckleberry	360	1992	Reconstruction of upper end of Eagle Creek Road.
Hells Canyon Creek Recreation site	600	1992	Access road and parking area paving, boat ramp paving, employee housing at Big Bar, prehistoric and historic site interpretation
Low Saddle Road and Recreation site	2,100	1994	Reconstruction and surfacing of scenic drive on the Idaho side of Hells Canyon.
Elkhorn Drive	1,000	1991	Pavement seal
Moss Springs Campground	92	1990	Reconstruction
Facility Replacements	32	1990	Replacement of deteriorated facilities at 7 sites on Pine Ranger District
Marble Creek Pass Road	200	1994	Reconstruction of road access to Elkhorn Crest Trail
Indian Creek Road	205	1992	Resurfacing of wilderness access road
Dug Bar Road and Recreation Facilities	4,000	1993	Realignment and resurfacing of road, construction of campground boat launch and trailhead on Snake River
Indian Crossing	700	1991	
Pittsburg Landing	2,600	1991	
Hat Point Road and Scenic Overlook	800	1992	
Hells Canyon Overlook (I)	76	1990	
Hells Canyon Overlook (II)	2,000	1992	

**TABLE A-5 (Cont.)**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

<b>Project Name</b>	<b>M\$ Cost</b>	<b>Year</b>	<b>Description</b>
Oregon Trail Interpretation	128	1990/92	Interpretive signing, route marking for the Blue Mountain segment of the Oregon Trail, per approved management plan.
Stabilization and interpretation of Kirkwood Ranch complex in Hells Canyon	500	1993	Stabilization and interpretation
Steamboat and Hat Point Road Interpretation	85	1990	Interpretive signing for reconstructed access routes into Hells Canyon NRA
Anthony Lakes CCC Interpretation	20	1990	Interpretive signing for CCC era recreation improvements
Recreation Companion Projects Grande Ronde River Road Project	405	1990/94	Mitigate effects road realignment, betterment of existing sites
North Fork Catherine Creek Fencing		1991	Exclude cattle from important recreation area
La Grande ATV Cost-Share Trailheads	220	1991/93	Four trailheads to serve motorized trails.
Buck Creek Trailhead	70	1991/93	Relocation
Main Eagle (Boulder Park) Campground	100	1991	Construction/Relocation
Hells Canyon NRA Miscellaneous Recreation Sites	32	1991	Minor betterment of several sites
Facility Replacements	38	1991	Replacement of deteriorated facilities at 13 sites on La Grande, Eagle Cap, and Wallowa Valley Ranger Districts
South Fork Burnt River Road	160	1993	Resurfacing of road accessing four campgrounds
West Eagle Meadows Trailhead	42	1992	Trailhead reconstruction
Two Color Campground Rehabilitation	90	1992	Rehabilitation
North Fork Catherine Creek Campground, Trailhead, Picnic	36	1992	Betterment



TABLE A-5 (Cont.)

## RECREATION-RELATED CAPITAL INVESTMENT PROJECTS

Project Name	M\$ Cost	Year	Description
Cold Springs Road and Recreation Site	2,300	1996	Improvements
Upper Imnaha Recreation Site and Road	4,000	1995	Improvements
Black Lake Campground	400	1996	Improvements
Hat Point Campground	1,000	1996	Improvements
Saw Pit Saddle	143	1990	Reconstruction and surfacing of scenic drive on the Idaho side of Hells Canyon
Grandview Campground	120	1992/93	Relocation
Triangle Mountain Road and Recreation Site	2,700	1995	Reconstruction and surfacing of a scenic route on the Idaho side of Hells Canyon.
Fish Lake Campground	72	1992	Upgrading
La Grande Winter Sports Area Trailhead and Shelter	65	1994	Construction
Woodley Campground and Handicapped Fish Access	70	1995	Betterment
Moss Springs Trailhead	65	1995	Betterment
Bird Track Springs Wildlife Interpretation Area Campground	68	1996	Construction
Heavens Gate Road	4,900	1996	Relocation and reconstruction.
Hells Canyon VC (Clarkston)	11,200	1994	
Riggins Visitor Center	1,600	1993	
Baker Ranger District Interpretive	42	1992	Interpretive signing on 4-6 historical sites on the Baker Ranger District
Grande Ronde Campground	36	1993	Reconstruction and Betterment
Facilities Replacement	93	1993	Replace deteriorating facilities at eight recreation sites on the Baker Ranger District

**TABLE A-5 (Cont.)**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

<b>Project Name</b>	<b>M\$ Cost</b>	<b>Year</b>	<b>Description</b>
Scenic Byways Interpretation	66	1993	Interpretation on four cultural sites located adjacent to the Elkhorn Scenic Byways
Correction to Union Creek	287	1993	Expansion and betterment, conversion to full service sites (water and electricity).
Salt Creek Summit Snopark	179	1990	Development
Coyote Campground	190	1991	Betterment
Vigne Campground	100	1992	Betterment
Joseph Rim Campground	300	1994	Development
Joseph Rim Day Use Area	150	1993	Development
Burnt Springs Wetlands Nature Development	65	1994	Development
Harl Butte Viewpoint/Picnic Area	25	1995	Betterment
ATV Trails Partnership Development	50	1994	Development
Mountain Bike Trails Development	20	1992	Development
Chico Trailhead	70	1993	Betterment
Joseph Canyon Overlook	93	1992	Betterment
Sled Springs Interpretive Trail	15	1993	Betterment

**TABLE A-5 (Cont.)**  
**RECREATION-RELATED CAPITAL INVESTMENT PROJECTS**

Project Name	M\$ Cost	Year	Description
<b>Other projects listed in the Comprehensive Management Plan for the Hells Canyon National Recreation Area as occurring in the first five years following plan approval but with no specific schedule.</b>			
Memaloose to Warnock Corral	20		Minimum improvements to correct resource damage
Interpretive Facilities at Several Locations	400		Hells Canyon Dam, Lookout Mountain, Steamboat Springs, Heavens Gate, Lewiston, Riggins
<b>Other recreation site improvement projects proposed for the 1990-1996 time period but with no specific schedules.</b>			
Harl Butte Road	75	1992	Reconstruction and surfacing
Devils Run	120	1992	Reconstruction and surfacing.
Mount Emily Viewpoints and Trailheads	140	1992/93	Construction
Social Security Point	194		Campground and day-use facilities
Eagle Forks Campground	22		Water and fencing
Union Creek Campground	133		Expansion
McBride Campground	26		Reconstruction
West Eagle Meadows Trailhead	136		Betterment
Eagle Creek Campground	22		Restoration
Main Eagle Trailhead	25		Betterment - southwest side of Eagle Cap Wilderness.
Lillyville Trailhead	6		Betterment - Lostine River
Two Pan Trailhead	8		Betterment - Lostine River

TABLE A-6  
FIVE YEAR ALLOTMENT MANAGEMENT PLANNING SCHEDULE

DISTRICT	1990		1991		1992		1993		1994	
	ANAL	AMP	ANAL	AMP	ANAL	AMP	ANAL	AMP	ANAL	AMP
BAKER	Hawley	Denney	Lckhart	Hawley	Blue Ca	Lckhart	Auburn	Blue Ca	Bourne	Auburn
		Dean-Hu			Wash Gu			Wash Gu		
PINE	Pine Va		Pine Va		N Pine	Pine Va	Turnbul	N Pine	Dubl Pi	Turnbul
					Snake R		Doyle	Snake R	Goose Cr	Doyle
					Ghost Cr			Ghost Cr		
UNITY	N Burnt	Camp Cr	Ironside	N Burnt	Whipple	Ironside	S Burnt	Whipple	Bull Run	S Burnt
NORTH	Marr Fl	Chesnim	Marr Fl		Hmlwnt	Marr Fl		Hmlwnt	Log Cr	
ZONE	Cold Sp	Cherry	Dod-Has	Cold Sp	Rhodes	Dod-Has	Rhodes			Rhodes
	Table Mt	Cayuse	Pittsbg	Table Mt	Vigne	Pittsbg		Vigne	Dun-Thn	
	Doe Cr	Buck Cr	Toomey	Doe Cr	Davis Cr	Toomey		Davis Cr	Saddle	
		Fine	Cow Cr	Canyon	Temp Snk	Cow Cr	Temp Snk			Temp Snk
		Swamp Cr			Lst Cow		Jim Cr	Lst Cow		Jim Cr
		Bear Gl			Elk Mt		McGraw	Elk Mt		McGraw
					Divide		Duck Cr	Divide		Duck Cr
							Grouse			Grouse
							Nebo		Nebo	
							Mud Sp			Mud Sp

ANAL Analysis  
AMP Allotment Management Plan  
Additional notes on following page

The above listed allotments are shown in a five year planning schedule for the development of Allotment Management Plans. This schedule is based on the Allotment Management Planning Process developed for the Wallowa-Whitman National Forest. The process divides allotments into five priority categories based on the severity of resource problems and the absence or existence of an approved and functioning allotment management plan.

The allotments shown below will be worked into the planning schedule for the second five years based primarily on their planning priority.

Priority 1 - (Allotments having basic resource damage. Included in this priority are allotments with riparian or soils problems and not having an approved and functioning allotment management plan.) All Priority 1 allotments are scheduled within the initial five year schedule.

Priority 2 - (Allotments having resource problems other than basic resource damage and not having an approved and functioning allotment management plan) - Jordan Creek

Priority 3 - (Allotments not rated as Priority 1 or 2 but not having an approved and functioning allotment management plan) - Mill Creek, Indian Lake, Big Creek, Five Points, Tie Creek, Warm Springs, Standley-Huckleberry, Frazier Mountain, Fruit Springs, Gilkison, Big Sheep, Powwatka South, Upper Clover Creek, Clark Mtn, Snow Creek, Milk Creek, Joseph Canyon, Tope Creek, Mud Creek, Sheep Creek, Indian Point, Sparks, Special #2, Powell Gulch, Huckleberry, Minam River, Powwatka North, Schleur, Middle Point, Turner Creek, Dunn Creek, Mink, Cache Creek, Squaw Creek, Dobbins, Carrol Creek, Chicken Hill, Big Canyon, Hale, Alder Springs, Elmwood Ranch, Whitney, Cree, N Fork Burnt River, Tater Knob, Coyote, Needham Butte, Al-Cunningham, Wallupa, Cummings.

Priority 4 - (Allotments having an approved and functioning allotment management plan. May have basic or other resource problems but the management strategies in the plan are leading toward resolution of the problems. These plans are scheduled for periodic revision or update) - Horse Creek, Lone Pine, Stovepipe, Hunting Camp, Boulder Creek, Eagle Valley, Lobo, Chalk Creek, Keeler, Black Mountain, Day Ridge, College Creek, Cougar Creek, TeePee Elk, Hope Creek, Blackmore, Snell, Grizzly Ridge, W. Burnt River, Haney Gulch, Trouble Gulch, Crow Creek, Spring Creek, Starkey, Tin Trough, McCarty, China Creek, Sheep Ranch.

Priority 5 - (Allotments to be worked into the planning priority at a later date, or to be planned in cooperation with the BLM) Sheep Rock, Castle Rock, Indian Crane, Bridgeport

TABLE A-7

**ACTION PLAN FOR THREATENED, ENDANGERED, AND SENSITIVE  
FISH AND WILDLIFE SPECIES**

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Peregrine Falcon	1 Continue with hacking site at P O Saddle F S Cost - \$6,000	1 Continue with hacking site at P O Saddle F S Cost - \$6,000	1 Same as FY 1990 Determine whether or not to continue	1 Anticipate closing out P O Saddle hack site F S Cost - None
	2 Co-op with state on foot and/or aerial check of P F sighting reports and/or potential natural nest sites F S Cost - \$1,000	2 Same as FY 1990 and include search for natural nesting resulting from the P. O Saddle hacking site F S Cost - \$1,500	2 Same as FY 1990 and develop nest site management/protection plan for any active nest F S Cost - \$2,000	2 Same as FY 1990 and monitor nest site management plan(S) F S Cost - \$2,000
	3 Begin Co-op planning for an additional hacking site F S Cost - \$500	3 Develop plan, EA, and M of U for additional hacking site \$1,500 F S Cost - \$1,500	3 Begin implementation of new hacking site F S Cost - \$6,000	3 Continue with new hacking site F S Cost - \$6,500
Bald Eagle	1 Second of two years coop survey for winter roost sites on W-W and adjacent areas F S Cost - \$15,000	1 In co-op with state, develop winter roost site management plans for half the sites identified on National Forest land F S Cost - \$4,00/yr for 2 years	1 Same as for FY 1991 (remaining half)	1 In co-op with state, monitor roost site use and management plan compliance F S Cost - \$4,000
	2 Monitor and maintain Unity nest site F S Cost - \$1,000	2 Same as FY 1990	Same as FY 1990	Same as FY 1990
	3 In Co-op with state field review and evaluation of each of 17 potential nest sites or areas F S Cost - \$3,400	3 In co-op with state, check potential nest sites for occupancy (aerial and foot) F S Cost - \$3,400	3 Same as FY 1991. F S Cost - \$1,700	3 Same as for FY 1991 plus make analysis for each site that may result in increased attraction F S Cost - \$4,000
Wolverine	With state and other interested parties, make determination whether to pursue additional studies or to begin transplanting program Document decision in an EA F S Cost - \$1,000	Co-op with state on either transplanting program or additional inventory and study F S Cost - \$3,000	Co-op with state on either transplanting program or additional inventory and study F S Cost - \$3,000	Co-op with state on either transplanting program or additional inventory and study F S Cost - \$3,000

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Townsend's Big-eared Bat	Co-op with states on additional inventory for new colonies and monitoring existing colonies  F. S Cost - \$8,100 (portions of 3 Forests)	Same as for FY 1990 plus co-op on development of a management/protection plan  F S Cost - \$2,000	Co-op with states on maintenance of colony habitat and complying with management/protection plan  F S Cost - \$1,000	Same as for FY 1992
Prebles Shrew	Co-op with states on additional inventory and survey to more specifically define National Forest distribution F S cost - \$2,000	Same as FY 1990 plus co-op development of status and distribution report and species management plan F S Cost - \$4,000	Co-op with states on monitoring for compliance with species management/protection plan  F S Cost - \$1,000	Same as FY 1992
North American Lynx	No action	No action	Co-op with state on surveys/inventories to confirm existence-distribution on Forest F S Cost - \$2,000	Same as for FY 1992  F S Cost - \$2,000
California Bighorn	No action	No action	No action	No action
Greater Sandhill Crane	Co-op with ODF&W on field survey to confirm distribution and search for additional nesting birds F S Cost - \$1,000	Co-op in development of species nesting habitat management plan if found on or adjacent to W-W  F S Cost - \$1,000		
Long-billed Curlew	Same as for Sandhill Crane  F S Cost - \$2,000	Continue with field survey to confirm distribution and search for additional nesting birds  F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land F S Cost - \$1,000	
Upland Sandpiper	Same as for Sandhill Crane F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$1,000	
Ferruginous and Swainson's Hawks	No Action	Co-op field survey to confirm distribution and search for additional nesting birds  F S. Cost - \$4,000	Continue with field survey to confirm distribution and search for additional nesting birds  F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land F S Cost - \$2,000

	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Townsend's Big-eared Bat	Co-op with states on additional inventory for new colonies and monitoring existing colonies  F S Cost - \$8,100 (portions of 3 Forests)	Same as for FY 1990 plus co-op on development of a management/protection plan  F S. Cost - \$2,000	Co-op with states on maintenance of colony habitat and complying with management/protection plan  F S Cost - \$1,000	Same as for FY 1992.
Prebles Shrew	Co-op with states on additional inventory and survey to more specifically define National Forest distribution  F S cost - \$2,000	Same as FY 1990 plus co-op development of status and distribution report and species management plan  F S Cost - \$4,000	Co-op with states on monitoring for compliance with species management/protection plan  F S Cost - \$1,000	Same as FY 1992
North American Lynx	No action	No action	Co-op with state on surveys/inventories to confirm existence-distribution on Forest  F S Cost - \$2,000	Same as for FY 1992  F S Cost - \$2,000
California Bighorn	No action	No action	No action	No action
Greater Sandhill Crane	Co-op with ODF&W on field survey to confirm distribution and search for additional nesting birds  F S Cost - \$1,000	Co-op in development of species nesting habitat management plan if found on or adjacent to W-W  F S Cost - \$1,000		
Long-billed Curlew	Same as for Sandhill Crane   F S Cost - \$2,000	Continue with field survey to confirm distribution and search for additional nesting birds  F S. Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land  F S Cost - \$1,000	
Upland Sandpiper	Same as for Sandhill Crane F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$2,000	Same as for Long-billed Curlew F S Cost - \$1,000	
Ferruginous and Swainson's Hawks	No Action	Co-op field survey to confirm distribution and search for additional nesting birds  F S Cost - \$4,000	Continue with field survey to confirm distribution and search for additional nesting birds  F S Cost - \$2,000	Co-op in development of species nesting/foraging habitat management plan for those areas found on or closely adjacent to National Forest land  F S Cost - \$2,000



	Fiscal Year 1990	Fiscal Year 1991	Fiscal Year 1992	Fiscal Year 1993
Yellow-billed Cuckoo	Co-op with state to confirm existing distribution and search for additional nesting birds. F. S Cost - \$1,000	If found on National Forest lands, co-op with state in development of species habitat management plan. F. S Cost - \$500	Co-op with state on monitoring for compliance with species habitat management plan F S Cost - \$200	

2

TABLE A-8

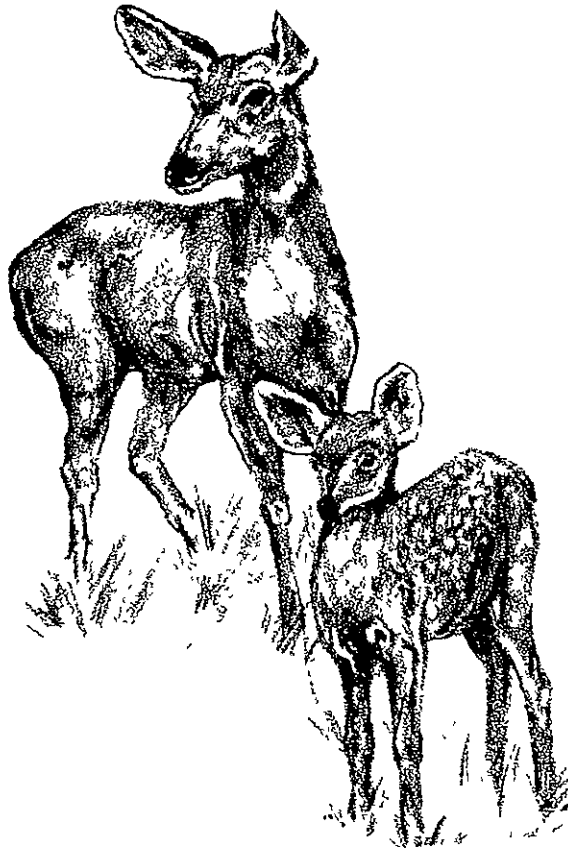
**FACILITIES CAPITAL IMPROVEMENTS**  
**(Buildings and Other Administrative Facilities)**

Project Name	Ranger District	Type Work	Sq Ft	FY	Cost M\$
Wallowa Valley Bunkhouse	WV	New Const	3,000	94	100
Drain Pave Baker/Unity Comp	Baker/Unity	Reconst	N/A	92	130
Baker Office	Baker	Replace	15,000	92	2,000
Pine Office Addition	Pine	ADD	4,000	94	100
Pine Bunkhouse	Pine	New Const	2,000	95	80
Unity Office Addition	Unity	ADD	4,000	94	100
Unity Bunkhouse	Unity	New Const	2,000	94	80
Clarkston Office	HCNRA	New Const	8,000	95	800
Riggins Office	HCNRA	Replace	3,000	96	250
Starkey Hdqtrs Office	PNW	Replace	4,000	94	350
Kirkwood Water System	HCNRA	New Const	N/A	93	25
Greenhouse/Storage Impr	PNW	Major Mod	400	93	40
Herbarium Impr.	PNW	Major Mod	400	94	30
Starkey Sewage System	PNW	New Const	N/A	91	50
Starkey Water System	PNW	New Const	N/A	91	75
Billy Meadows Bunkhouse	WV	Renovation	400	95	50
Unity Storage Bldg.	Unity	New Const	1,000	90	35
La Grande VIS Cost-Share	La Grande	New Const	1,000	96	300
Catherine Creek Cabin	La Grande	Stabilize	N/A	96	10
Point Prominence	La Grande	Rehab	N/A	96	20
Johnson Rock	La Grande	Rehab	N/A	96	20
Two Color Guard Station	La Grande	Rehab	N/A	96	60
Historic Moss Sprgs Guard Station	La Grande	Rehab	N/A	96	80
Grande Ronde Guard Station	La Grande	Rehab	N/A	96	50

NOTE. The Forest is currently preparing a Forest-wide "Facilities Master Plan" which will document all needs associated with the administrative facilities on the Wallowa-Whitman. This plan is to be completed in 1990, and as a result, some of the above projects may change. Future programming of facilities on the Forest will be guided by the Facilities Master Plan upon its completion.

# *APPENDIX B*

## Visually Sensitive Travel Routes



## APPENDIX B

### VISUALLY SENSITIVE TRAVEL ROUTES

This appendix identifies and describes the visually sensitive travel routes on the Forest. A map showing Sensitivity Level 1 and Level 2 travel routes is provided in the map packet which accompanies the Environmental Impact Statement. The major travel routes are the most sensitive (Sensitivity Level 1). The viewshed number refers to the areas mapped on Figure IV-1 and shown in Table IV-6 and IV-7 of the Environmental Impact Statement. Less sensitive viewsheds (Sensitivity Level 2) are listed in Table IV-7 of the EIS.

Sensitivity Level 1 normally indicates that landscapes adjacent to the travel route are managed in such a manner that management activities are not visually evident (Retention). Along Sensitivity Level 2 routes, management activities are normally to be visually subordinate, but management activities may be evident (Partial Retention). With Level 3 routes, management activities are dominating, but appear natural (Modification). These guidelines apply for the routes shown in this table with the exception of those indicated by the Management Direction column. For these particular routes, management direction to meet a certain visual quality objective is different than indicated by the sensitivity level in order to achieve other resource objectives of the land management plan.

R = Retention, PR = Partial Retention, and M = Modification.

#### SENSITIVITY LEVEL 1 & LEVEL 2 TRAVEL ROUTES

Travel Routes	Sensitivity Level	Management Direction	General Description	Viewshed
Grande Ronde River	1		Grande Ronde River Corridor (between Umatilla and Wallowa-Whitman National Forest)	1
Highway 3	1		State Highway 3 north of Enterprise	2
Trail 1653	1		Bear Creek	3
Road 8250	1		Road to Bear Creek Campground	3
Road 8210	1		Lostine Canyon	4
Road 8205	1		Hurricane Creek Road	5
State Highway 82	1		Wallowa Valley	5
Trail 1807	1		Hurricane Creek Trail	5
Trail 1812	1		McCully Creek	5
Tramway	1		Mount Howard Tramway	5
Road 39	1		Wallowa Mountain Loop Road, entire	5,7
Road 3960	1		Ollokot to Indian Crossing Campground	8
County Road 727	1		Imnaha to Neman Ranch	9
Road 4260	1		Imnaha to Dug Bar	10
Road 493	1		Melhorn Saddle to Pittsburg Landing	11
Idaho Power Road 1039	1		Oxbow to Hells Canyon Dam	12
Road 6610	1	PR	Clear Creek to Trail 1867	13

Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
State Highway 86	1		Richland to Oxbow	14
Road 7740	1		East Eagle Creek	15
Road 7755	1		Eagle Creek - Boulder Park area	16
Road 7015	2		Empire Gulch - Switchback above Eagle Creek	16,31
Road 7015	1		Switchback to Junction with Road 77	16
Highway 203	1		State Highway 203 (Catherine Creek State Park, et al)	17
Road 77	1		Corridor from State Highway 203 through Bald Hill, to Flagstaff Butte, and Junction Empire Gulch Road 7015	16,17
Trail 1914	1		West Eagle Meadows, (Fake Creek)	17
Road 67	1		Big Creek to Tamarack Campground	18
Road 6220	1	PR	Mill Creek to Moss Springs	19
Summit Springs	1		Summit Springs Viewpoint overlooking Moss Springs	19
Highways 237 & 82	1		Grande Ronde and Cove Valley	20
Road 66	1		Duck Lake and Duck Creek Area	21
Road 66	1	PR	Fish Lake area	22
Road 66	1	PR	Clear Creek to Fish Lake	13,14,22
I-84	1		Interstate 84 and railroad corridor	23
State Highway 350	1		Lightning Creek to Imnaha (town)	24
State Highway 82	1		La Grande to Enterprise	25
Highway 244	1		State Highway La Grande to Ukiah	26
Road 51	1		Grande Ronde River Road to Tony Vey Meadows	27
Road 73	1		Elkhorn Loop Drive Scenic Byway to Anthony Lakes	28,29
Winter Sports Area	1		Anthony Lakes Ski Area	29
Trail 1606	1		Trail north from Crawfish Lake to Road 73	29
Trail 1611	1		Elkhorn Crest Trail, entire length	29,33,34
Peavy Cabin Road	2		Road from 73 to Peavy Cabin	30
Road 3120	1		Grandview Drive - Mt. Emily	31
Road 31	2		Forest Boundary northeast to junction 3120 (Conklin Spring)	Q
New Mt Emily Road	2		Carters Hog Ridge to about Telephone Springs on Road 3120	31/P
Road 4240	1		Imnaha to Hat Point	32
Trail 1633	2		Trail 1633 to Twin Lakes	33
Road 6550	2		Road from Highway 7 to Trail 1633	33
Trail 1624	2		From Pole Creek Ridge to Elkhorn Crest Trail	33
Highway 7	1		Phillips Lake area	33

\*Refer to Figure IV-1 & IV-2 and Tables IV-6 and IV-7 in Chapter IV of the DEIS

Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
Road 7301	2		North Fork North Powder River	34
Trail 1632	2		North Fork North Powder River (to Meadow Lake)	34
Trail 1617	2		Killamacue Creek Trail	34
Trail 1621	1		Lost Lake and Meadow Lake	34
Goodrich Road	2		To Goodrich Reservoir	34
Pine Creek Road	2		To Pine Creek Reservoir	34
Trail 1626	2		Rock Creek Lake Trail	34
Trail 1628	2		From Road 5520 to Western Union Mine	34
Road 6510	2		Marble Creek Road	34
Road 5520	2		North Fork Rock Creek	34
Highway 7	1		State Highway 7 to Whitney-Tipton	35
County Road 507	1		North Burnt River (Whitney to King Ranch	36
Highway 26	1		State Highway 26	37
Road 6005	1		Mammoth Springs, South Fork Burnt River	38
Snake River	1		From Hells Canyon Reservoir at Oxbow to Washington-Oregon border	10,11,12, 39,42,43, 44,DD,EE
Jeep Road 1774	1		Memaloose to Somers Point to Lord Flat	39
Trail 1607	2		Dutch Flat Creek	40
Road 21	2		Spring Creek area	A
Road 21	2	M	From 244 to Frog Heaven Meadows	B
Road 5160	2	M	From Highway 244 to Road 51	C
Trail 1853	2	M	Lookout Creek Trail from Road 5160 to Tower Mountain	C
Trail 1843	2	M	From 1842 Junction north	P
Road 43	2	M	From Ladd Canyon to Elkhorn Drive Road	D
Road 5125	2	R	From Grande Ronde River to Ladd Canyon Road 43	D
Road 51	2		Tony Vey Meadows to North Fork John Day Campground	E
Road 52	2		From Road 51 to Ukiah (Blue Mt. Scenic Byway)	F
Road 73	2		North Fork of the John Day to Granite (Scenic Byway)	G
Road 73	2		Sumpter to Granite (Scenic Byway)	H
Road 1042	2	M	From Highway 7 to Greenhorn	I
Road 2640	2	M	From Mammoth Springs along Last Chance Creek	J
Road 1689	2	M	West Fork Camp Creek area	K
Road 1684	2	M	East Camp Creek	L

\*Refer to Figure IV-1 & IV-2 and Tables IV-6 and IV-7 in Chapter IV of the DEIS

Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
Old Highway 7	2		Stices Gulch to Mill Creek on Dooley Mountain	M
County Road 550	2		Road from Sumpter to Bourne	N
Road 73	2		From Badger Butte to North Fork of the John Day Campground (Scenic Byway)	O
Trail 1859	2	M	Five Points area to Big Rock Spring Area	P
Trail 1842	2		Five Points area to New Mt. Emily Road	P
Road 31	2	M	From I-84 to Conklin Spring	Q
Road 19	2		Beaver Meadows area	R
Road 62	2	M	Grey Mountain - Mount Moriah area	S
Trail 1843	2		Main Five Points Creek to 1842 junction	P
Trail 1843	2	M	Upper Five Points Creek from Junction 1842 to Road 3120	P
Road 6220	2		From Road 62 to an area south of Point Prominence	S
Road 600 & 650	2		Along South Fork Catherine Creek to Flagstaff Butte	T
Road 7785	2		North Fork Catherine Creek to Trail 1905	T
Trail 1905	2		North Fork Catherine Creek to Wilderness Boundary	T
Road 7787	2	M	Buck Creek Road	T
Trail 1944	2	M	Middle Fork Catherine Creek Trail to Burger Pass Trail	T
Trail 1951	2	M	Squaw Creek Trail to China Ridge Trail	T
Road 7045	2		Road Corridor from Balm Creek Reservoir to Road 67	U
Road 70	2		Sawtooth Ridge - Balm Creek area	U
Road 7735	2		Forest boundary to Eagle Forks Campground	V
Trail 1878	2		Along Eagle Creek	V
Road 77 and 7715	2	M	From Highway 86 to McBride Campground and Summit Point Trailhead	W
Road 70	2		From Forshey Meadow to Empire Gulch Road 7015	X
Road 46	2		From State Highway 3 to Crow Creek	Y
Road 46	2		Wellamotkin Drive to Zumwalt Road	Z
Road 4620	2	M	Crow Creek Road	AA
Crow Creek Road	2		Davis Ranch to Joseph Creek	AA
Road 4625	2	M	Road 46 to Vigne Campground	BB
Road 420	2		Grave Point to Kirkwood Cow Camp	DD
Road 1819	2		Iron Phone Junction to Low Saddle	DD
Road 3930	2	M	To Harl Butte	GG

Travel Routes	Sensitivity Level	Management Direction	General Description	View-shed
Trail 1640	2		Peavy Cabin to Summit of Elkhorn Ridge	N. Fork John Day Wilderness
Road 1434	2		Bull Run Mountain, Table Rock, and Mine Ridge Area	Monument Rock Wilderness
Old Oregon Trail	1		All within Forest	23
Cornucopia Road	1		Carson to Cornucopia	14
Road 493	1		NRA Boundary to Pittsburg Landing	11
Road 420	2		Pittsburg Road to Buckhorn Spring	DD
Imnaha River Road	1		Dug Bar to Indian Crossing	6,9,10
Road 2060	2		Iron Phone Junction to Low Saddle	DD
Road 2060A	2		Saw Pit Saddle Road	DD
Roads 112 and 114	1		Roads to Black Lake	41
Road 4240	1		Hat Point Road	32
Road 1774	1		Western Rim Trail (4WD)	39
Road 3965	2		Road 39 to Lookout Mountain	12
Road 490	2		Road 39 to Road 3965	6
Trail 1767	1		From Trail 1774 to Somers Point	39
Road 517	1		Road to Seven Devils and Heavens Gate Lookout (interior exclusion Seven Devils Wilderness Viewshed)	
Road 4680	2		Cold Springs Ridge Road to Grande Ronde River	CC
Road 1819	2		Buckhorn Spring to Cold Spring	DD



# *APPENDIX C*

## Timber Information And Ten-Year Timber Sale Action Plan



## APPENDIX C

### TIMBER INFORMATION AND TEN-YEAR TIMBER SALE ACTION PLAN

#### INTRODUCTION

This appendix displays how the timber outputs, as projected by the preferred alternative in the FEIS, are likely to be provided during the first ten years of plan implementation. It also identifies the earned harvest factor (EHF) which will be used to adjust harvest levels if, due to lack of funding or for other reasons, the level of precommercial thinning required by the plan cannot be accomplished.

The Timber Sale Program Quantity is divided into two sections -- regulated and unregulated timber volume. The regulated timber volume (the allowable sale quantity) is that portion for which the Forest will be held accountable to offer for sale during the planning period. In general, it is the volume from sound green trees that can be sawn into lumber.

In addition to the regulated volume, there is often a market for down logs (culls), dead trees, or small size material that may be sold with the regulated timber or by separate sale. This material may be processed into chips, poles or other products. Fuelwood is included in the unregulated volume.

Table C-1 lists the timber sales currently planned during the first five years of plan implementation. This list may be updated during plan implementation, with corrected lists being available at the National Forest Headquarters and at District offices. Maps showing approximate sale areas are available for review at Forest Offices.

Table C-2 illustrates the total timber harvest for the ten-year period.

Table C-3 describes the regulated volume, distributed to the three market for the first five years.

Table C-4 illustrates the unregulated volumes. The Forest is not required to sell these amounts. The figures are their best estimates of what will be sold under presumed market conditions. If the markets for the material improve, the amount of material to be sold may increase -- and if markets are not available, the amounts shown may not be achieved.

An estimate of the amount of various vegetation management practices likely to occur in the first decade is shown in Table C-5. The comparisons of the potential environmental effects of those practices that are issue-related or controversial are contained in Appendix G of the EIS. The reasons for the choice of the vegetation management practices are contained in Appendix B and Chapter IV, both of the EIS.

Regeneration harvests include any removal of trees intended to assist regeneration already present or to make regeneration possible. Intermediate harvests are those removals of trees from a regular crop or stand between the time of their formation and the harvest cut (SAF 1971).

Timber stand improvement comprises all intermediate cuttings made to improve the composition, constitution, conditions, and increment of a timber stand (SAF 1971). As used in these documents, the term excludes those instances in which the intermediate cutting is sold.

Reforestation or regeneration is the renewal of a tree crop, whether by natural or artificial means

Estimates as to the incidence of these practices and their timing were developed based on the professional opinions of Forest specialists, the available literature, and modelling techniques such as FORPLAN. Refer to the EIS, the Regional Guide, the planning records, FSM 2400, and FSH 2409 13 for more information on the subject

Page 25 of the Comprehensive Management Plan for the Hells Canyon National Recreation Area states that "Potential yield volumes will be specified in the Wallowa-Whitman National Forest Management Plan." The term "potential yield" has since been replaced (in standard Forest management terminology) by the term "allowable sale quantity" in recognition that the desired timber sale level for any given period of time may be more or less than the potential of an area to produce timber. Consequently, this plan identifies the portion of the Forest's total ASQ which will normally come from the Hells Canyon National Recreation Area rather than identifying the potential yield of the area. The projected timber offering from the NRA is 6 MMBF/year during the first decade, although this may vary in response to the Forest-wide resource situation

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1990

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
BAKER DISTRICT								
Webfoot Salvage	T 6S, R 37E, Secs 18&19	1	400	1.1	1 1	0	0	Fire salvage from Tanner Gulch Fire Tractor and cable Mostly spruce, larch
Auburn Salvage	T 12S ,R 40E	3	2833	11.3	11 3	0	0	Fire salvage from Dooley Mtn Fire Majority skyline. Western part of fire
Ebell Salvage	T.12S , R 41E	3	3,000	10 7	10 7	0	0	Fire salvage from Dooley Mtn Fire Majority skyline Eastern part of fire
Clear Fire Salvage	T 7S , R 36E , Sec 16	18	1,000	0	1 4	0	0	Older dead fire-killed timber from 1986 Clear Fire Mostly LPP Tractor
Replacement	T 9S , R 36E., Secs 35&36	1	723	1 9	2 4	2 4	0	Mixture of shelterwood and overwood removal 85% tractor, 15% skyline Mostly assoc species
Fuelwood Sales	District-wide	1	400	0	3.5	0	0	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1&18	300	0	0 3	0	0	Combination of wood residue, post and poles, and commercial fuelwood
Subtotal - Baker			8,656	25 0	30.7	2 4	0	
WALLOWA VALLEY DISTRICT								
Cabin Salvage	T4S , R 46E , Secs 16&21	1	2,000	5 5	5 5	2 2	0 7	Engelmann spruce salvage Tractor and skyline Regeneration harvest
Loop Salvage	T 4S , R 46E	1	400	2 7	2 7	5 6	12 7	Fire salvage from Canal Fire Mostly Engelmann spruce Tractor, skyline, and helicopter
Engraver Salvage	T 4S , R 46E	1	3,000	4 5	4 5	--	--	Spruce. Tractor and skyline Insect salvage sale.
Smokey Salvage	T 3N , R 43E	1	1,550	4 0	4 0	4 0	2 0	Engelmann spruce salvage

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Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Hump Salvage	T 4S ,R 46E Sec 2,11	1	100	3	3	-	-	Engelmann spruce salvage.
Fire salvage additions to existing timber sale contracts	District-wide	1	20,000	20 9	20 9	-	-	T S contract modifications
Sled	T 3N , R 43E , & R 44E	1	1,200	6.5	6 5	4 8	23 8	Tractor and Skyline Reduced tire pressure.
Papoose	T 3S , R 45E , Secs 25,36, T 3S , R 46E , Secs 30,31	6	500	0 5	0 5	-	-	Engelmann spruce and Canal Fire salvage
E P 's	District-wide	1	100	0 5	0 5	-	-	Evaluation plantations
Fuelwood Sales	District-wide	1			2 8	-	-	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1			0 6			Combination of wood residue, post and poles, and commercial fuelwood
Subtotal - Wallowa Valley			28,850	45 4	48 8			
<b>HELLS CANYON NRA</b>								
Fire Salvage additions to existing TS contracts	T 4S , R 46E , 47E , 48E	11	400	1 2	1 2			TS contract modifications
Black SSTS	T 5S , R 47E	11	200	0 3	0 3			
Summit Salvage	T 1S , R 49E	11	950	4 3	4 3			Fire Salvage, Long Fire area
North SSTS	T 5S , R 48E	11	526	0 3	0 3			
North 2	T 4S , 5S , R 48E	11	300	1.5	1.5			
Lookout Salvage		11	500	3 0	3 0			Fire salvage, Long Fire area Sale access is uncertain.
Spain	T 3N , R 48E , Secs 5&32	11	400	2 2	2 2			1 2 MMBF PP, 1 0 DF/WL 80% tractor, 20% skyline

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Fuelwood Sales	District-wide	11		--	0.8			Personal use charge fuelwood
Subtotal - HCNRA			3,276	12.8	13.6			
<b>EAGLE CAP DISTRICT</b>								
Canyon Salvage	T 1N , R 41E., Sec 10,15,27,39	1	200	0.4	0.4	--	--	
Bebe SSTS	T 1S , R 42 E , Sec 9	1	40	0.4	0.4	--	--	
Wing-Papoose Salvage	T 3S , R 45E., Sec 25,36	1&6	700	3.0	3.0	0	0	Joint salvage sale with Wallowa Valley District
Fuelwood Sales	District-wide			--	0.1			Personal use charge fuelwood
Miscellaneous Small Sales	District-wide			--	0.4			Wood residue, post and poles, and miscellaneous salvage
Subtotal - Eagle Cap			940	3.8	4.3			
<b>LA GRANDE DISTRICT</b>								
French Bug Salvage	T 3S , R 33E , Sec 16	1	1,900	9.5	9.5	5.1	8.9	9.5 MMBF associated species Skyline and tractor.
Fire Bug Salvage	T 6S , R 36E , 37E	3	---	6.4	6.4	--	--	6.4 MMBF associated species Tanner Gulch Fires Tractor, skyline, and helicopter
Rotor Salvage	T 4S , R 34E	3	---	2.5	2.5	---	---	All helicopter yarding of associated species
Riley Salvage	T 3S , R 33E , Sec 36	1	2,500	4.5	4.5	1.5	3.4	Associated species Skyline and tractor
Skidder	T 1S , R 41E	1	1,320	9.7	11.4	1.3	7.9	1.3 MMBF PP, 2.1 MMBF DF/WL, 6.3 MMBF FF&O Skyline and tractor.
Strip LP Salvage	T 1S , R 41E , Sec 7	1	100	0.5	1.0	--	0.1	LP pulpwood, all tractor
Lost Goose	T 7S , R 43E , Sec 17	3	483	4.0	4.0	3.8	2.7	Associated species Skyline and tractor

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Potters Mill	T 3S , R 41E	1	560	1 8	5 5	10 2	13 7	Associated species and LP pulpwood Tractor and pulpwood CTI/VTP demo sale
Chicken Beak Salvage	T 7S , R 36E , Sec 9	1	—	1 0	4 0	--	--	Associated species and LP pulpwood. All tractor
Porter Salvage	T 2S , R 35E , Sec 1	1	—	1 0	1 0	--	--	Associated species Tractor and skyline.
Lookout	T 5S , 6S , R.34E	1	1,000	5 2	5.7	11 4	1 4	Associated species and LP pulpwood Tractor and skyline
Vey Salvage	T 6S , R 35-1/2E , Sec 24	1	—	0 7	0 7	--	--	Associated species Tractor and skyline
Bounty Salvage	T.6S , R 35-1/2E , Sec 22	1	—	1 5	1 5	--	--	Associated species Tractor and skyline
Syrup Creek	T 3S , R 34E , Sec 15	14	1,800	10 0	10 5	26 3	9 2	Starkey Experimental Forest Associated species Tractor and skyline. CTI/VTP demo sale
Trail Salvage	T 5S , R 34E , Sec 27	1	—	0 7	0.7	--	--	Associated species. All tractor
Diptheria Salvage	T 6S , R 35E , Sec 24	1	—	0 4	0 4	--	--	Associated species Tractor and skyline
Camp Out	T 6 S , R.40E , Sec 14	1	450	4 0	4 5	--	--	Associated species Skyline and tractor
Shanty Salvage	T 5S , R 35E , Sec 21	3	—	1.0	1.0	--	--	Associated species
Fuelwood Sales	District-wide	1 3	150	--	5.0	--	--	Personal use charge fuelwoods.

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Miscellaneous Small Sales	District-wide	1 3	100	3 0	3 0	--	--	Wood residues, post and poles, miscellaneous salvage
<b>Subtotal - La Grande</b>			—	67 4	82 8			
<b>PINE DISTRICT</b>								
Biddy Beagle	T 7S , R 44E	1	92	0 9	0 9	--	--	Shelterwood and overwood removal sale PP and associated species All tractor
Walnut	T 7S , 8S, R.44E, 45E	1,3	648	3 0	3 5	0 3	--	50% PP, 10% skyline 90% tractor
Dark Red	T 7S , 8S , R 43E , 44E	1,3,7	736	3 6	3 6	1 0	--	75% PP, 10% skyline 90% tractor
ELOP Salvage	T 6S , R 46E	1,3A	50	1 0	1 0	--	--	Engelmann spruce salvage Tractor
Corral Creek Salvage	T 6S , R 47E	1	150	1.0	1 0	--	--	Engelmann spruce salvage Tractor
Schneider Salvage	T 6S , R 45E , 46E.	1,3A	98	0 7	0 7	--	--	Engelmann spruce salvage
Clear Creek Salvage	T 6S , R 46E	1,3A	108	0 6	0 6	--	--	Engelmann spruce salvage Tractor and skyline
Lark	T 7S , R 46E , 47E	1,3	302	2 0	2 0	--	--	Associated species Tractor and skyline
Panther	T 6S , 7S , R 45E	1	772	9 6	9 6	1 0	--	30% PP, 70% associated 80% helicopter, balance tractor and skyline
Lily	T 7S , R 43E , 44E	1,3,7	1,000	3 5	3 5	2 0	--	Associated species Tractor and skyline
West Wall	T 7S , 8S , R 45E	1,3	500	2 5	2 5	2 0	--	Associated species Tractor or skyline



Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Fuelwood Sales	District-wide	1,3	--	--	0 7	--	--	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1	200	0 4	0 5	--	--	Wood residue, post and poles and miscellaneous salvage
Subtotal - Pine			—	28 8	30 1			
<b>UNITY DISTRICT</b>								
Smoken Salvage	T 14S , R 36E	1	1,212	5 2	5 2	--	--	Fire salvage Monument Rock Fire
Walaho	T 10 S , R 36E	1	1,200	4 5	4 5	4 5	--	
Bull Salvage	T 14S , R 36E.	1,6	1,400	3 2	3 2	--	--	Fire salvage Monument Rock Fire Helicopter logging
Crypt	T 11&12S , R 36E	1,3	800	3,0	3 0	--	1	
Fuelwood Sales	District-wide	1,3	—	--	1 0	--	--	
Miscellaneous Small Sales	District-wide	1,3	--	--	0 5	--	--	
Subtotal - Unity			—	15 9	17 4			
<b>TOTAL PROGRAMMED</b>					205 2 235 3			MMBF Sawtimber MMBF All products

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1991

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
BAKER DISTRICT								
Snell Hollow	T 9S , R 37E , Secs 5,6,7	1	377	37	42	14	0	10% PP, 90% associated species Tractor and skyline
Isham	T 6S , R 37E., Secs 13,14,23,24	1	843	116	126	9	0	Insect salvage sale
North Wind	T 9S , R 37E , Secs 2,3,4,6,7	1	1,037	68	73	79	75	15% PP, 85% associated species Tractor, short-span, and long-span skyline
Fuelwood Sales	District-wide	1	400	0	37	0	0	Personal use charge fuelwood
Subtotal - Baker			2,657	221	278	183	75	
WALLOWA VALLEY DISTRICT								
Nova	T 3N , R 44E	1	300	06	06	—	—	Harvest overstory removal sale
Bearpaw	T 4N , R 46E	3	753	50	50	47	247	
Hilton	T 3N , R 46E , 47E	3	1,532	88	88	75	128	
Tamarack	T 3N , R 47E , 48E	3	700	30	30	—	40	
Mandy L P	T 4S , R 47E	—	500	15	15	—	—	
Hrway	T 3N , R 44E	1	540	20	20	18	30	
Tanya	T 4S , R 46E , 47E	—	500	17	17	—	—	Harvest final removal entry
Reba	T 4N , 3N , R 45E , 46E , 47E	1,3	1,300	12	12	—	—	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Fuelwood Sales	District-wide	1,3	—	—	3 0	—	—	Personal use charge fuelwood
Miscellaneous Small Sales	District-wide	1	—	0 2	0 2	—	—	Miscellaneous product sales
<b>Subtotal - Wallowa Valley</b>			—	24 0	27 0			
<b>HELLS CANYON NRA</b>								
Long	T.5N , R 46E , Sec. 34	11	150	1	.1	—	—	
Nog	T 4S , R 47E	11	150	1	.1	—	—	
Fuelwood Sales	District-wide	11	—	—	0 9	—	—	Personal use charge fuelwood.
<b>Subtotal - HCNRA</b>			—	0 3	1 1			
<b>EAGLE CAP DISTRICT</b>								
Alkanyon	T 1S , R 42E	1	450	1 0	1 0	—	—	
Fuelwood Sales	District-wide	1	—	—	0 1	—	—	Personal use charge fuelwood
<b>Subtotal - Eagle Cap</b>			—	1.0	1 1			
<b>LA GRANDE DISTRICT</b>								
Tinman	T 5S , R 34E	1	600	3 0	3 0	2 0	8 1	17% PP, 83% associated species Tractor
Blue Spring	T 5S , R 35E , Secs 28,29	3	110	0 6	0 7	1 0	0 2	Associated species Tractor.
Horn	T 2S , 3 S , R 35E	1	900	3 6	3 8	—	—	Associated species Tractor and skyline
Union Spring	T 6S , 7S., R 42E, 43E	1	600	3 7	3 7	—	—	Associated species Tractor and skyline

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Stiff II	T 5S , R 36E , Sec 27	3	2,000	10 0	12 0	12 0	10 0	Associated species 80% tractor, 20% skyline
Cantrell Spring	T 2S , R 36E , 37E	3	416	1 4	1.4	—	—	PP and associated mix Tractor and skyline
Long Shot	T 5S , R41E	1	480	2 3	2 6	11 1	14 2	Associated species Tractor and skyline
Meadow Muffin	T 6S , R 36E	1	300	2 0	3 8	1 5	3 3	PP, associated, LPP mix Tractor and skyline
HFR 91	<i>To be selected</i>	1	200	2 5	2 5	—	—	Final overwood removal entries
Sardine	T 6S , 7S , R 42E	1	600	3 1	3 1	1 4	4 7	
Sawtooth	T 7S , R 42E , Sec 15	1	700	7 0	7.0	—	—	
Gravel Flat	T 6S , R 42E	3	500	2 5	2 5	—	—	
Miscellaneous Small Sales	District-wide	1,3	760	3 8	4 4	—	—	Miscellaneous salvage and product sales
Fuelwood Sales	District-wide	1,3	150	—	5 0	—	—	Personal use charge fuelwood.
Subtotal - La Grande			—	45 5	55 5			
<b>PINE DISTRICT</b>								
<i>Backsight</i>	T 6S , R 44E.	3A	216	3 4	3 4	4.1	—	90% skyline, associated
Trinity	T 6S , 7S , R 45E , 46E	1,3	500	6 6	6 6	4 0	—	15% PP, 45% skyline 55% tractor

C-12	Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
	Fuelwood Sales	District-wide	—	—	—	1 0	—	—	Personal use charge fuelwood
	Miscellaneous Small Sales	District-wide	—	400	0 6	0.5	—	—	Miscellaneous product and salvage sales
	<b>Subtotal - Pine</b>			—	10 6	11 5			
	<b>UNITY DISTRICT</b>								
	Rail II	T 13S , 14S , R 35 1/2E 36E	1	500	2 5	2 5	5	1	75% tractor, 25% skyline.
	High Noon	T 13S , R 36E	1	125	0 5	0 5	—	—	Tractor OR/TH
	Ewe	T 13S , R 35 1/2E	1	458	1 4	1.4	—	—	Reg tractor
	Clay	T 10S , R 35E	3	365	1 0	1 0	—	1	Reg tractor
	Trout	T 10S , 11S , R 36E , 37E	1,3	1,000	3 2	3 2	3	4	Regen 75% tractor, 25% skyline
	Jack	T 10S , R 36E	1,3	2,000	7 8	7.8	—	2	regen 75% tractor, 25% skyline
	Fuelwood Sales	District-wide	1 3	—	—	1 0	—	—	Personal use charge fuelwood
	Miscellaneous Small Sales	District-wide	1,3	—	0 1	0 5	—	—	Miscellaneous product and salvage sales
	<b>Subtotal - Unity</b>			—	16 5	17 9			
	<b>TOTAL PROGRAMMED</b>					123 4 145 7	MMBF MMBF	Sawtimber All Products	

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1992

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
BAKER DISTRICT								
High Ham	T6S , R 37E , Secs. 1,6,7,8,17,18	1	1136	5 0	5 5	5 4	5 0	85% WF&O, 15% LPP 50% tractor, 50% skyline, 65% regen clear-cut, 35% final removal
Sand Gap	T 6S ,7S , R 37E	1	931	6 5	7.8	8 0	3 0	
Rock Willow	T 7S , R 37E , Secs 11,12,13,14,15	1	794	8 0	9 0	3 0	0 2	
Upper Wahoo	T 9S , R 37E , Secs 11,12,13,14	1	700	3 0	3 0	2 3	0	100% skyline 100% WF and others
Misc Small Sales	District-wide	1	200	0 2	0 2	--	0	Small salvage sales
Fuelwood Sales	District-wide	1	400	0	4 0	0	0	Personal use charge fuelwood
Subtotal - Baker			4,161	22 7	29 5	18 7	1 0	
WALLOWA VALLEY								
Elk Creek	T 2N , R 43E , Secs 2-4,9-16,21-34	3	10,530	3 5	3 5	3 5	13 8	Commercial thinning sale
Allen	T.5N , R 45E , Secs 35,36	1,3	1,100	7 0	7 0	3 0	2 0	
Cut Out	T 3N , R 47E , Sec 4	1	--	4 0	4 0	2 0	1 5	
Peavine	T 4N , R 46E , Sec 29,32	1	--	8 5	8 5	3 0	1 0	
Wood	T 3N , R 43E	1	---	4 0	4 0	---	4 0	
Firewood Sales	District-wide				3 0			Personal use charge fuelwood

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Misc Small Sales	District-Wide	1,3	1,000	4 0	4 0	--	--	Miscellaneous products and salvage sales
<b>Subtotal - Wallowa Valley</b>				31 0	34 0			
<b>HELLS CANYON NRA</b>								
Bluebird	T 4N , 5N , R 47E	11	1,000	4 5	4 5	4 0	7 1	Selection harvest 75% tractor, 25% skyline 45% PP, 55% DF and other species
Cold Salvage	T 5S , R 47E	11	300	0 2	0.2	---	---	Misc Small Salvage
Fuelwood Sales	District-wide	11	---	---	0 8			Personal use charge fuelwood
<b>Subtotal - HCNRA</b>				4 7	5 5			
<b>EAGLE CAP</b>								
Bitter Green	T 1S., R 43E	1	75	0 3	0 3	--	--	
Long Root	T 1S , R 42E	1	100	0 3	0.3	--	--	
Fuelwood Sales	District-wide	1	---	---	0 1	---	---	Personal use charge fuelwood
<b>Subtotal - Eagle Cap</b>			400	0 6	0 7			
<b>LA GRANDE</b>								
Basin	T 6S , R 43E , Sec 20	1	1,450	9 1	9 1	2.5	18.0	
Little Bear	T 4S , R 41E	1	1,300	13 2	16 5	3 6	11 5	All associated species Tractor and skyline yardinf
Sufferin Smith	T 6S , R 42E	1	1,300	6 5	6 9	3 0	2 0	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Foghorn	T 6S , R 35 1/2E	1	1,300	5 1	5 4	0 3	3 0	
Herron	T 1S , R 37E	3	400	5 0	5.3	1 0	1 5	
Big Boundary	T 6S , R 35E , Secs. 34 35	3	40	0 4	0 4	--	1 0	
HFR 92	To be selected	1	200	2 5	2 5	--	--	Final overwood removal entries.
Eagle Beak	T 6S , R 43E , Secs 10,16	1	220	3 0	3 0	1 0	--	
Misc Small Sales	District-wide	1,3	350	3 4	3.5	--	--	Salvage and miscellaneous forest product sales
Fuelwood Sales	District-wide	1,3	150	--	5 0	--	--	Personal use charge fuelwood
<b>Subtotal - La Grande</b>			7,625	48 2	57.6			
<b>PINE</b>								
Cabin Creek	T 6S , R 46E ,47E	3	600	12 0	12 0	4 0	---	
Miscellaneous Small Sales	District-wide	1	300	0 6	0 6	--	--	Salvage and miscellaneous forest product sales
Fuelwood Sales	District-Sales	1,3	--	--	1 0	6	--	Personal use charge fuelwood
<b>Subtotal - Pine</b>				13 0	13 2			
<b>UNITY</b>								
North Fork Corridor	T 11S , R 36E	1,3	600	3 0	3 0	--	--	
Irish Quartz	T 9S , 10S , R 35E	18	1,500	5 0	6 0	2 6	12 0	75% tractor, 25% skyline
Slip	T 11S , R 36E	1,3	500	1 5	1 5			75% tractor, 25% skyline



Sale Name	Legal Description	Mgt. Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
South Fork Burnt River		1	—	0.5	0.5			
Elmer	T 14&15S., R 37E	1	1,500	4.1	4.1			100% skyline
Dorf	T 13&14S, R 35,35-1/2,36E	1.3	1,500	2.9	2.9	8	4	50/50
Three Cent	T 10S, R 36&37E	1.3	1,000	2.0	2.0	2	2	
Fuelwood Sales				—	1.5			Personal use charge fuelwood
<b>Subtotal - Unity</b>			—	19.0	21.5			
<b>Total Programmed</b>					139.2 164.8	MMBF MMBF	Sawtimber All Products	

TABLE C-1  
Five-year Timber Sale Action Plan

Fiscal Year 1993

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
BAKER								
Thrd Wolf	T 5S , R 37E	1	1,180	5 0	5 4	2	2	
Dutch II	T 6S, R 37E , Secs. 1,2,3,11,12,13	1	2,200	10 0	10 0	0	4 5	
Finish II	T 5S , R 38E , Secs 19,20, 29, 30, 31	1	1,500	7 0	7 0	0	4 5	
Fuelwood Sales	District-wide	1,3	500	0	5 0	0	0	
Subtotal Baker			5,380	22 0	27 4	2	11	
WALLOWA VALLEY								
Rich	T 3S , R 47E , Sec 36, T 4S , R 47E , Sec 1,12, T 4S , R 48E , Sec 6,7, T 3S , R 48E , Secs 16-21,29-32	1	2,000	1 0	1 0	-	-	
Mahogany	T 3S , R 47E , T 4S., R 47E	1	20,000	6 0	6 0	1 0	3 5	
Chesbridge	T 3N , R 45E Secs. 26,27	1	124	2 0	2 0	0 5	1 5	Helicopter yarding sale
Meadow	T 4N , R 46E , Secs 10,11,1,3-15,22-26	1	1 600	10 0	10 0			
Baldwin	T 4N , R 46E	1,3	68	8 0	8 0	3 5	3 0	
Fuelwood Sales	District-wide		—	—	3 5			Personal used charge fuelwood sales
Misc Small Sales	District-wide	1	--	4 0	4 0			

C-18	Subtotal - Wallowa Valley				30 5	34 5			
	HELLS CANYON NRA								
	Boot Hog	T 4N , R 47E , 48E.	11	1,500	6 7	6 7	1 5	10 0	
	Beaver Salvage	T 5S., R 47E	11	300	0.3	0 3			
	Fuelwood Sales	District-wide	11	--	--	0 8	--	--	Personal use charge fuelwood
	Subtotal - HCNRA			1,800	7.0	7 8			
	EAGLE CAP								
	Alder	T 2S., R 44E	3	400	0 9	0 9	--	--	
	Fuelwood Sales	District-wide	1	--	--	0 1			Personal use charge fuelwood
	Subtotal - Eagle Cap			400	0 6	1.0			
	LA GRANDE								
	Silver Bullet	T 6S., R 41E , 42E	1	550	2 0	2 0	4 0	6 0	
	Swampy	T 6S., 7S , R 36E	3	710	5 0	5 3	2 0	4 0	
	Tweety	T 3S , R 36E	3	650	1 3	1 3		0 5	
	Moonshine	T 6S., R 35 1/2S , Sec 36	1	480	4 3	4 6	1 5	4 0	
	Lost Hunter	T 6S , R 36E	3	1,700	4 3	4.6	3 0	2 0	
	Boulevard		1	400	3 6	5 8	3 6	4 0	
	Drumhill	T 1S , R 37E	3	500	4 0	5 0	2 0	3 0	
	Evans	T 2S , R 37E	3	200	2 0	2 0	2 2		

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Eagle II	T 6S , R 43E , Sec 8	1	800	5 6	6 0	7 0	3 0	
Flagstaff	R 6S , R 43E Sec 6	1	240	1 4	1 4	3 0		
Fool Hen	T 6S , R 35 1/2E	3	480	2 0	2 0	0 5	2 0	
Horse Fly	T 6S., R 35E , Sec 3	1	250	1 0	1.0		1 0	
3 Cabin	T 2S , R 37E	3	500	2 0	2 0	3 0	2 0	
Warm Creek	T 2S , R 40E , 41E	3	1,200	7 0	7 3	1 0	3 0	
HFR 93	To be selected	1	200	2 0	2 0	—	—	Final overwood removal entries
Reservoir	T 2S , 3S , R 36E	3	450	0 6	0 6	2 0	3 0	
Oz	T 5S , R 34E	1	500	1 5	2 5	1 0	2 0	
Miscellaneous Small Sales	District-wide	1,3	200	4 0	4 5			
Fuelwood Sales	District-wide	1,3	150	—	5 0			
<b>Subtotal - La Grande</b>			10,516	50 0	64 9			
<b>PINE</b>								
Cougar	T 6S , R 43E , 44E	1,3	1,000	12 0	12 0			
Misc Small Sales	District-wide	1	300	1 1	0 5			
Fuelwood Sales	District-wide	1,3	—	—	0 6			
<b>Subtotal - Pine</b>				13.1	13 1			

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
UNITY								
Pat	T 10&11S , R 35-1/2,36E	3	1,600	40	40	1	1	Visual, 65% tractor, 35% skyline
Gieser	T 10S , R 35-1/2,36E	1,3	1,000	40	40	2	1	Regen 50/50
Sunflower	T 11S , R.38E	1,3	250	05	05	1	1	Regen thin 60/40
Crunch	T 11S , R 38,39E	1	500	15	15	2	1	Regen thin 75/25
Rough	T 14,15S , R 36,37E	1	375	15	15	1	2	Regen 50/50
Highway 26	T 12S , R35-1/2,36E	1	375	15	15		1	Visual, Regen thin 80/20
Beaver	T 9,10S R 35-1/2,36E	18	1,600	40	40		5	Regen cut, WF and LP
Slop	T 11,12S , R 36,37E	3	500	10	10	1	1	Regen thin, 75/25
Miscellaneous Small Sales				10	1.5			
Fuelwood Sales				—	10			
Subtotal - Unity				190	205			
TOTAL PROGRAMMED					141 7 171 9	MMBF MMBF	SAWTIMBER ALL PRODUCTS	

TABLE C-1  
Five-Year Timber Sale Action Plan

Fiscal Year 1994

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
BAKER DISTRICT								
Silver	T 8S , R 36E , Secs 25,26,36	1	876	10 0	12 0	4 0	3 5	
Umpqua	T 8S , R 36E , Secs 35,36	1	854	7	8 0	3	5 0	
Downie	T 8S , R 36E , Secs 33,34	1	710	2 0	3 0	2	1	
Miscellaneous Small Sales	District-wide	1	200	3 0	3 0	0	0	
Fuelwood Sales	District-wide	1,3	500	0	5 0	0	0	Personal use charge fuelwood
Subtotal - Baker			3,140	22 0	31 0	9	9 5	
WALLOWA VALLEY								
Marr	T 2S ,3S , R 47E	1	1,200	4 0	4 0	2 5	1 5	
Canyon	T 4N , R 47E , Secs 6,7	1	3,800	5 0	5 0	6 0	5 0	
Cat	T 3N , R 43E , Secs 29,32	1	5,000	5 0	5 0	3 0	3 0	
Eyebrow	T 5N , R 41E , Secs 33-35	1	450	3 0	3 0	2 0	1 0	
Hay Pen	T 4N , R 46E , Secs 16,21	1	2,600	4 0	4 0	4 0	3 5	
Harl	T 4S , R 48E , Secs 5,6	1,3	5,000	6 0	6 0	2 0	2 0	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Miscellaneous Small Sales	District-wide			4 0	4 0	—	—	Small salvage and miscellaneous forest product sales
Fuelwood Sales			—	—	3 5	—	—	Personal use charge fuelwood
<b>Subtotal - Wallowa Valley</b>				31 0	34 5			
<b>HELLS CANYON NRA</b>								
Madeover	T 5S., R 46E , Secs 13,14,15	11	1,500	6 9	6 9	6 0	5	
Janes Salvage	T 3S , R 48E	11	200	0 1	0 1			
Fuelwood Sales	District-wide	11	—	—	0 8	—	—	Personal use charge fuelwood
<b>Subtotal - Hells Canyon NRA</b>			1,700	7 0	7.8			
<b>EAGLE CAP</b>								
Foxer	T 1,2S , R 42E	3	2,000	5 0	5.0	3 0	2 0	
Misc Small Sales	District-wide	1	200	—	0 2			
Fuelwood Sales	District-wide	1	—	—	0 1			
<b>Subtotal - Eagle Cap</b>			2,200	5 0	5 3			
<b>LA GRANDE</b>								
Tanner LP	T 6S , R 36E , Secs 32,33	3	425	5 5	13 4	5 0	—	All associated species and LP pulp Tractor and skyline sale.
McKay	T 2S., R 35E , Secs 21,22	1	240	1 7	1 7		1 5	
HFR 94	To be selected	1	200	2 0	2 0	—	—	Final overwood removal entries
Split Rail	T 7S , R 35 1/2E	1	1,000	0 5	1 0		0 5	
Black Velvet	T 6S., R 42E	1	2,000	8 0	10 0	3 0	7 0	

Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
Homer	T 6S , R 35E	1	960	4 8	5 1	2 0	4 0	
Stonewood	T 5S , R 35E , Secs 22,23	3	2,400	2 4	14 2	0 5	2 0	
Broken Bottle	T 5S , R 42E	1	600	2 0	6 7	1 0	2 0	
Hilgard	T 2S , R 36E	3	200	1 0	1 0	5 0	—	
Winter Ridge	T 4S , R 35E , 36E	3	800	3.0	3 2	1 0	3 0	
Misc Small Sales	District-Wide	1,3	200	4 0	4 5	—	—	
Fuelwood Sales	District-Wide	1,3	150	—	5 0	—	—	Personal use charge fuelwood sales
<b>Subtotal - La Grande</b>			12,275	50.5	67 8			
<b>PINE</b>								
Paddy	T 7S , R 44E	1,3	400	4 5	4 5	3 0	—	
Eagle Forks	T 7S , R 43E	1,3	1,000	6 6	6 6	1 0	—	
Misc Small Sales	District-wide		400	1 0	1 0	—	—	Miscellaneous salvage and forest products sales
Fuelwood Sales	District-Wide	1,3	—	—	1 0	—	—	Personal use charge fuelwood
<b>Subtotal - Pine</b>				13 1	13 1			



Sale Name	Legal Description	Mgt Area	Area (Acres)	Volume Sawtimber	MMBF All Products	Road Miles C R		Comments
<b>UNITY</b>								
Willow	T 14,15S , R 37E	1	400	1 0	1 0	1		Regen 60/40
Calif	T 10S , R 35,35-1/2E.	1,3	525	2 1	2 1	2		Along No Fork Burnt River, Regen 60/40
Huckleberry	T 10,11S , R 37E	1,3	250	0 5	0.5		2	Regen. Thin 80/20
Curran	T 11S , R 37,38E	1,3	250	0 5	0 5	0 5	1	Regen Thin 60/40
Lyman	T 12 , R 35-1/2,36E	1	250	1 0	1 0	1		Regen 60/40
Sister	T 11,12S , R 35-1/2,36E	1,3	330	1 0	1.0		1	RC Regen Thin 75/25
Pole	T 12,13S , R 35-1/2,36E	1	570	2 0	2.0		1	Regen RC 75/25
Look Out	T 14S , R 35-1/2,36E	1	330	1 0	1 0	1		Regen 50/50
Misc Small Sales				1 0	1 5			Miscellaneous salvage and forest product sales
Fuelwood Sales				—	1 0			Personal use charge fuelwood
<b>Subtotal - Unity</b>				10 1	11 6			
<b>TOTAL PROGRAMMED</b>					138 2 177 6	MMBF MMBF	Sawtimber All Products	

**Table C-2**  
**TEN-YEAR TIMBER SALE ACTION PLAN SUMMARIES**

**Summary of Acres and Volumes by Working Group 3/**

Working Group 1/	Ten-Year Goals FY 90-99			Five-Year Program FY 90-94			Balance To Be Programmed FY 95-99		
	M Acres 1/	MMCF 1/	MMBF 1/	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
CD	92	69	384	68 6	40 5	220 9	23 4	28 5	163 1
CW	131	167	947	121 9	84 2	455 8	9 1	82 8	491 2
LP	20	39	99	6 6	9 8	37 8	13 4	29 2	61 2
CD-B	1	2	10	0 4	0 2	1 1	0 6	1 8	8 9
MSS, Roundwood, Fuelwood 4/	134	129	646	24 0	28 9	154 6	110 0	100 1	491 4
<b>Totals</b>	<b>378</b>	<b>406</b>	<b>2086</b>	<b>221 5</b>	<b>163 6</b>	<b>870 2</b>	<b>156 5</b>	<b>242 4</b>	<b>1215 8</b>

**Summary of Acres and Volumes by Silvicultural Method 3/**

Silvicultural Method 1/	Ten-Year Goals FY 90-99			Five-Year Program FY 90-94			Balance To Be Programmed FY 95-99		
	M Acres 1/	MMCF 1/	MMBF 1/	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
RC	12	15	88	22 5	17 0	89 2	0	0	0
INT	39	16	90	13 3	9 4	51 3	25 7	6 6	38 7
REG	127	222	1129	138 6	90 6	483 6	0	131 4	645 4
SEL	66	24	133	15 6	12 8	68 1	50 4	11 2	64 9
Sanitation/Salvage 4/	134	129	646	31 5	33 8	178 0	102 5	95 2	468 0
<b>Totals</b>	<b>378</b>	<b>406</b>	<b>2086</b>	<b>221 5</b>	<b>163 6</b>	<b>870.2</b>	<b>178 6</b>	<b>244 4</b>	<b>1217 0</b>

**Summary of Acres and Volumes by Yarding Methods 3/  
for the Allowable Sale Quantity**

Yarding Method 1/	Ten-Year Goals FY 90-99			Five-Year Program FY 90-94			Balance To Be Programmed FY 95-99		
	M Acres 1/	MMCF 1/	MMBF 1/	M Acres	MMCF	MMBF	M Acres	MMCF	MMBF
G 4/	176	183	790	139 2	105 7	543 8	36 8	77 3	246 2
S	59	83	445	69 8	48 7	264 3	0	34 3	180 7
H/L	9	11	57	12 5	9 2	62 1	0	1 8	0
<b>Totals</b>	<b>244</b>	<b>277</b>	<b>1440</b>	<b>221 5</b>	<b>163 6</b>	<b>870 2</b>	<b>36 8</b>	<b>113 4</b>	<b>426 9</b>

1/ CD - Conifer Douglas-fir/ponderosa pine working group

CW - Conifer grand fir/Englemann spruce working group

LP - Lodgepole pine

CD-B - CD working group with severe brushfield competition

G - Ground based (tractor) yarding

S - Skyline cable (0-2,000') yarding

H - Skyline cable (2,000' and over) and helicopter yarding

RC - Removal cut (final removal cut from a planned shelterwood or seed tree and overstory removal from an existing two-storied stand)

INT - Intermediate harvest (commercial thinning)

REG - Regeneration harvest (clearcut, seed cut of a shelterwood or seed)

SEL - Selection harvest (NRA-dispersed recreation/timber management or special areas needing continuous forest cover)

Sanitation/Salvage - Fuelwood, cull logs, mortality salvage sales

Roundwood/Fuelwood - Commercial fuelwood and personal use fuelwood sales from small diameter LPP (less than 5 inches), dead LPP and logging slash removed in fuelwood form

2/ RC - 70 percent is removal cuts from planned shelterwoods and seed cuts, 30 percent is from overstory removal cuts

3/ The three summary tables are listed in the order of Forest Plan goal priority. The working group goal is the most significant. The timber program will be adjusted as necessary to assure that the ten-year goal for the Forest, by working group, is approximated. The silvicultural and yarding methods are planning objectives, but not overriding plan goals. These methods will be monitored annually and the need for adjustment considered as a part of the Five-Year Timber Sale Action Plan preparation.

4/ Actual programmed sell may vary depending on market availability and timber sell budgets assigned to the Forest under RPA.

TABLE C-3  
APPROXIMATE DISTRIBUTION OF ANNUAL ALLOWABLE SALE QUANTITY BY  
FOREST SERVICE MARKET AREAS 1/  
MMBF/YEAR UNLESS OTHERWISE INDICATED

Market Area	CD 2/	CW 2/	LPP 2/	CD-B 2/	Total Regulated Volume 3/
Wallowa Valley	15.2	21.9	1.9	1.0	40.0
WV RD					(30.5)
HCNRA					(7.0)
E Cap RD					(2.5)
La Grande	11.8	33.2	5.0		50.0
La Grande RD					(50.0)
Baker	11.4	39.6	3.0		54.0
Baker RD					(22.0)
Pine RD					(13.0)
Unity RD					(19.0)
Total MMBF	38.4	94.7	9.9	1.0	144.0
MMCF	(7.0)	(17.0)	(3.6)	(0.1)	(27.7)

The Ranger District Sale Quantities are shown in parenthesis, but are not added to the Market Area and total volume lines

1/ The Market Areas are.

Wallowa Valley - Wallowa Valley and Eagle Cap Ranger Districts and Hells Canyon  
National Recreation Area

La Grande - La Grande Ranger District

Baker - Baker, Pine, and Unity Ranger Districts

2/ CD = Conifer Douglas-fir, ponderosa pine working group

CW = Conifer grand fir, white fir, Engelmann spruce working group

LP = Lodgepole pine working group

CD-B = Above working groups with severe brushfield competition

3/ Total volume column represents the total volume chargeable to the regulated allowable sale quantity. This is the net (green) merchantable sawtimber portion of the Forest timber sales to be offered

The volume estimates in the tables are presented in both board feet (Scribner Decimal C) and cubic feet. The conversion ratios used for these displays are based on trees 7-inch dbh to 5-inch top for lodgepole pine and 9-inch dbh to 6-inch top for other species. This complicates comparisons somewhat since the conversion of board feet to cunits in existing timber management reports is based on 8-inch dbh to 5-inch tops for lodgepole pine and commercial thinning sales.

## CALCULATION OF EARNED HARVEST

The levels of outputs displayed on the preceding tables assume substantial investments in precommercial thinning. If full achievement of this intensive forestry practice is not possible due to lack of funding or other reasons, or if a higher level of achievement occurs, it may be necessary to adjust the Forest's allowable sale quantity (ASQ) accordingly.

Earned harvest of this plan is based on a comparison of the FORPLAN run for the proposed action (proposed intensity level) with a FORPLAN run having the same land allocations but with a reduced level of investment in cultural activities (base level).

TABLE C-4  
APPROXIMATE DISTRIBUTION OF ANNUAL SALE QUANTITIES OF ROUNDWOOD AND  
FUELWOOD BY FOREST MARKET AREAS (UNREGULATED VOLUME) 1/ 2/  
MMBF/YEAR (MMCF/YEAR)

Market Area	Roundwood 3/	Personal Use Fuelwood 4/	Total Unregulated Volume 1/	Grand Total All Volume Including Table C-3
Wallowa Valley	8.1	4.0	12.1	52.1
La Grande	14.3	9.0	23.3	73.3
Baker	17.2	12.0	29.2	83.2
Subtotal MMBF				
MMCF				
Total MMBF	39.6	25.0	64.6	208.6
MMCF	(7.9)	(5.0)	(12.9)	(40.6)

1/ Includes the total (opportunity) volume of nonchargeable sawtimber and wood fiber material, exclusive of volume from unsuitable lands. The volume of nonchargeable material to be programmed will depend upon funding available and market demand. Actual sell based on historical projections is expected to be less, particularly during the first half of the decade. For a more complete description of terms and definitions, the reader may wish to refer to the Management Information Handbook, Chapter 30, Timber Codes.

2/ The Market Areas are:

Wallowa Valley - Wallowa Valley and Eagle Cap Ranger Districts and Hells Canyon  
National Recreation Area

La Grande - La Grande Ranger District

Baker - Baker, Pine, and Unity Ranger Districts

3/ Roundwood - Includes volumes of older dead (cull) trees and per acre priced logs not suitable for sawtimber; small diameter (less than five inch dbh and tops smaller than four inches); and commercial firewood sales

4/ Personal-use firewood - Volume of personal-use fuelwood sold on a cord basis to individual families

Table C-5  
VEGETATION MANAGEMENT PRACTICES  
(Average Annual First Decade Figures)

Practice	Acres
Regeneration Harvest	
Clearcut	4,400
Shelterwood and Seed Tree	
Seed Cut	8,400
Final Removal Cut	1,200
Selection	6,500
Intermediate Harvest	
Commercial Thinning	3,900
Salvage/Sanitation	13,400
Timber Stand Improvement	7,400
Reforestation*	14,300

\*Includes both natural and artificial regeneration

The Earned Harvest Factor (EHF) is computed by comparing the Allowable Sale Quantity (ASQ) for the first decade of this plan, and its accompanying scheduled intensity forestry practices, with an ASQ computed for the same land use allocation for the first decade without those intensive forestry practices. The EHF represents how much volume each acre of applied intensive forestry practices contributes to the plan ASQ for the first decade. On the Wallowa-Whitman precommercial thinning is the only intensive practice used in the calculation.

The **Base Level** includes restocking and other intensive forestry practices planned for the first decade but does not include precommercial thinning. The harvest level associated with this intensity level is 232 MMCF in the first decade.

The **Intensive Level** includes all opportunities for intensive forestry practices which are scheduled for the first decade in the preferred alternative and are accomplished. The harvest associated with this intensity level is 282 MMCF in the first decade.

Earned harvest gain due to accomplishing planned intensive forestry practices in the first decade is calculated by subtracting the base level harvest from the intensive forestry level harvest and dividing this value by the acres of precommercial thinning planned for the first decade. This calculation is displayed in Table C-6.

Table C-6  
CALCULATION OF THE EARNED HARVEST FACTOR (EHF)

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Earned Harvest Factor =	$\frac{\text{Earned Harvest Gain (MMCF)/first decade Intensive - Base}}{\text{Acres of Intensive Forestry practices accomplished in first decade}}$	ft <sup>3</sup> /acre/ first decade
Earned Harvest Factor =	$\frac{282 \text{ MMCF} - 232 \text{ MMCF}}{73,660 \text{ acres}^*} = 679 \text{ ft}^3/\text{acre}/\text{first decade}$	

---

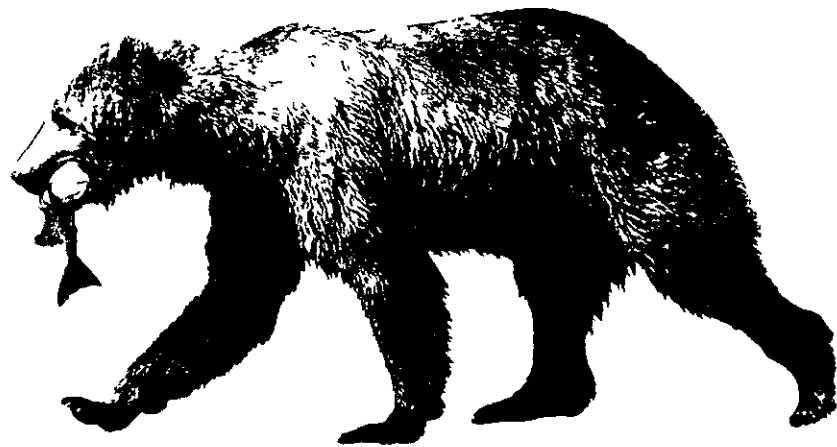
\*Total precommercial thinning scheduled in Decade 1.

Occurrences which may trigger adjustments during plan implementation are listed below

- 1 When accomplished earned harvest activities vary more than plus or minus 10 percent from the planned level, a change in the allowable sale quantity will be made based on a proration adjustment. The Forest Plan will then be amended to portray the new ASQ.
- 2 When the cumulative chargeable (regulated) sold volume measured in cubic feet varies more than plus or minus 10 percent of the planned volume (as when funding is inadequate) an adjustment in sale offerings for the remaining plan period will be triggered. The adjustment will be made with the objective of meeting the decade allowable sale quantity.
- 3 When cumulative changes greater than plus or minus 5 percent of the acres classified capable, available and biologically suitable occur, the allowable sale quantity will be recomputed using the Forest model. Cumulative changes in management area boundaries greater than 5 percent of the acres classified capable, available, and suitable will also trigger a recomputation of the allowable sale quantity using the Forest model. The Forest Plan will then be amended to portray the new Allowable Sale Quantity (ASQ).
- 4 When agents such as fire, insects or disease affect a cumulative total land area greater than 5 percent of the acres classified capable, available and biologically suitable, a new allowable sale quantity will be calculated using the Forest model and FORPLAN and the Forest Plan will be amended to portray the new ASQ.
- 5 Following analysis of updated timber inventory data, this data will be incorporated into the FORPLAN model and the ASQ will be recomputed. If the ASQ varies by more than 5 percent, the Forest Plan will be amended.

# *APPENDIX D*

## Landownership Plan



## APPENDIX D

### LANDOWNERSHIP PLAN

Modifications will be made to the National Forest's landownership pattern that will accomplish the objectives of this Forest Land and Resource Management Plan. Opportunities for improving the pattern will come through land exchanges, purchases, donations, transfers, interchanges, and disposals.

The public and private lands within and surrounding the Forest have been classified and prioritized for landownership adjustment with the intent of eventually achieving the optimum landownership pattern. All lands have been placed in one of the following groups.

**Group I** These are lands where Congress has either directly or indirectly instructed the Forest Service to retain ownership and acquire non-Federal lands for a designated purpose. The objective for Group I lands is to retain existing ownership and acquire the remaining lands as implied by Congressional direction. Acquisition of less than fee title will be considered if direction and land management objectives can be met.

**Group II.** These lands have been recognized for a special kind of management and are allocated to meet specific purposes. They include lands allocated to recreation, fish and wildlife, visual, watershed, soils, and special interest areas. Landownership direction is to retain in Federal ownership and acquire lands as the opportunity or need occurs. The basic criteria for Group II lands is special management to meet a special public need. Acquisition of less than fee title will be considered if *direction and land management objectives can be met.*

**Group III** Lands in this group are in the areas where management direction emphasizes commodity production. These lands will be available for land adjustment and usually will provide most of the land considered in exchange projects. Areas of mixed private and Federal ownership are included with the objective of rearranging ownership patterns to benefit commodity production goals for both ownerships. Also included are some isolated parcels that can best be managed by the Forest Service or some other public agency. The assumption for lands in this group is that they will be managed to provide similar types of outputs whether in private or public ownership.

**Group IV.** These are generally small isolated tracts of National Forest System lands that are costly to administer, contain no special resource features, or which cause land ownership conflicts. The landownership direction is to generally make these lands available for exchange or disposal.

**Group V.** These are lands which need more intensive study and planning before landownership decisions can be made. Land adjustment decisions will be deferred until the needed studies have been completed.

*Acreages within each group are summarized in Table D-1*



**LAND ADJUSTMENT PRIORITIES**

Lands which should be considered for acquisition to meet essential National Forest Management needs are assigned the following priorities:

- Priority 1 - Group I lands
- Priority 2 - Group II lands
- Priority 3 - Group III lands

National Forest lands available for use in exchange or disposal are assigned the following priorities

- Priority 1 - Group IV lands
- Priority 2 - Group III lands

A detailed map showing the lands available for ownership adjustment is available for review at the Forest Supervisor's Office.

Table D-1  
LANDOWNERSHIP PLANNING ACREAGES BY  
MANAGEMENT AREA AND OWNERSHIP\*

Management Area	LOP Group	National Forest	Private	Totals
1	III	714,285	28,480	742,765
	IV	1,960	-	1,960
3	III	377,923	18,950	396,873
	IV	4,190	-	4,190
4	I	582,700	2,100	584,800
5	II	4,967	-	4,967
6	II	122,788	2,060	124,848
7	V	26,909	10,840	37,749
8	I	14,355	110	14,465
9	I	161,078	1,120	162,198
10	I	128,009	21,280	149,289
11	I	70,706	1,740	72,446
12	II	15,160	-	15,160
13	V	5,733	-	5,733
14	II	27,051	320	27,371
15	II	36,750	130	36,880
16	II	5,744	-	5,744
17	II	6,594	-	6,594
18	II	59,743	200	59,943

\*Acreages are provided to illustrate the magnitude of the program.  
Figures are approximate and subject to annual change

# *GLOSSARY*



## GLOSSARY

Many of the definitions in this glossary are referenced to the following sources. The sources are identified by a number in parentheses following the definition. This number corresponds to the list below. Some other terms will be referenced to Forest Service Manuals (FSM), Forest Service Handbooks (FSH), or other sources which are too numerous to list. Finally, many other definitions are not referenced, but are those in general use on the Forest.

### SOURCE LIST

- (1) 36 CFR 219 National Forest Management Act Regulations
- (2) Regional Guide for the Pacific Northwest Region, 1984
- (3) SAF Dictionary of Forestry Terms, 1971.
- (4) The Random House College Dictionary, Revised Edition, 1975
- (5) Webster's New Collegiate Dictionary, 1977
- (6) Wildland Planning Glossary, 1976
- (7) Webster's Third New International Dictionary, 1981.
- (8) Wildlife Habitats in Managed Forests, The Blue Mountains of Oregon and Washington, 1979.
- (9) A Glossary of Terms Used in Range Management
- (10) Forest Service Manual or Forest Service Handbook
- (11) Habitat Effectiveness Index for Elk on Blue Mountain Winter Ranges, 1988

## A

**access** - Usually refers to a road or trail route over which a public agency claims a right-of-way for public use; a way of approach (4)

**acquired lands** - Lands added to the National Forest system by purchase, transfer, or donation under authority of the Weeks Law or related acts. Also, lands obtained by the Forest Service by exchange for other acquired lands.

**acre equivalent** - When applied to habitat improvement or improvement structures, this term reflects overall habitat benefits derived. It reflects the zone of influence of the habitat improvement for the target species. For example, a single water development for upland game birds occupies very little space but has an acre equivalent of 160 because it serves 160 acres of bird habitat. A single water structure for big game has a value of 640 because it has a larger zone of influence for the more mobile big-game animals.

**acre-foot** - A measure of water or sediment volume, equal to the amount which would cover an area of one acre to a depth of one foot (i.e., 43,560 cubic feet or 325,851 gallons) (6)

**activity** - An action, measure or treatment undertaken that directly or indirectly produces, enhances, or maintains forest and rangeland outputs, or achieves administrative or environmental quality objectives (FSM 1309, Management Information Handbook) An activity can generate multiple outputs. (2)

**activity fuels** - Fuels generated or altered by a management activity. (10)

**administrative unit** - An area under the administration of one line officer, such as a District Ranger, Forest Supervisor, or Regional Forester. (6)

**aerial logging** - A timber yarding system employing aerial means, e.g , balloons or helicopters, to lift the log or logs. (3)

**age class** - An interval, usually 10 to 20 years, into which the age ranges of vegetation are divided for classification or use (3)

**age group distribution** - Age class distribution, the location and/or proportionate representation of different age classes in a forest (3)

**airshed** - A geographic area that, because of topography, meteorology, and climate, shares the same air. (2)

**allocated funds** - Those funds transferred to the Forest from other agencies (including those from the Land and Water Conservation Fund, the Department of Labor, and the Soil Conservation Service) or provided from the K-V, Brush Disposal, Co-op Road Maintenance, or Purchaser Road Credits accounts.

**allocation** - See **land use allocation** or **resource allocation**

**allotment** - See **range allotment**.

**allowable sale quantity (ASQ)** - The quantity of timber that may be sold, from the area of suitable land covered by the Forest Plan, for a time period specified by the Plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity". (6) (1)

**all terrain vehicle (ATV)** - A vehicle characterized by its ability to negotiate most kinds of terrain, by virtue of traction devices such as wide tracks, large, low-pressure rubber tires and/or four-wheel drive.

**alternative** - One of several policies, plans, or projects proposed for decision making (2) (10)

**amenity** - An object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses The terms "amenity values" or "amenity resources" are typically used in land management planning to describe those resources for which monetary values are not or cannot be established (such as clean air and water, or scenic quality).

**anadromous fish** - Those species of fish that mature in the sea and migrate into streams to spawn Salmon, steelhead, and sea-run cutthroat trout are examples

**analysis area** - A delineated area of land subject to analysis of (1) responses to proposed management practices in the production, enhancement, or maintenance of forest and rangeland outputs and environmental quality objectives, and (2) economic and social impacts (FSM 1905) Tracts of land with relatively homogeneous characteristics in terms of the outputs and effects that are being analyzed in the FORPLAN model

**analysis of the management situation (AMS)** - A determination of the ability of the planning area to supply goods and services in response to society's demand for those goods and services (1)

**animal unit** - Considered to be one mature (1,000 lb ) cow or the equivalent based upon average daily forage consumption of 26 pounds dry matter per day. (9)

**animal unit month (AUM)** - The amount of forage required by one mature (1,000 lb.) cow or its equivalent for one month (based upon average forage consumption of 26 lbs. dry matter per day). (6)

Animal Month is one month's use and occupancy of the range by one animal. For grazing fee purposes, it is a month's use and occupancy of range by one weaned or adult cow with or without calf, bull, steer, heifer, horse, burro, or mule, or 5 sheep or goats. Forage consumption by other animals is converted to AUM's from animal months by the following factors:

mature cow	=	1.0 AUM	mature sheep	=	2 AUM
one horse	=	1.2 AUM's	cow/calf	=	1.32 AUM
ewe/lamb	=	.3 AUM			

**annual sale quantity** - The quantity of timber that may be sold annually from the area of suitable land covered by the Forest Plan

**anomalies** - A deviation from the common rule, type, or form. An incongruity or inconsistency (4)

**appropriated funds** - Monies authorized by an act of Congress which permit Federal agencies to incur obligations and to make payments out of the U.S. Treasury for specified purposes

**appropriate suppression response** - The planned strategy for suppression action (in terms of kind, amount, and timing) on a wildfire which most efficiently meets fire management direction under current and expected burning conditions. The response may range from a strategy of prompt control to one of containment or confinement (10)

**aquatic ecosystems** - Stream channels, lakes, marshes or ponds, and the plant and animal communities they support

**aquifer** - A geological formation or structure that contains water in sufficient quantity to supply needs for water development. (6)

**artifact** - An object made or modified by humans. (4)

**assigned values** - Monetary values given to nonmarket resources, based on estimates from comparable market transactions. For example, the benefits of dispersed recreation are given assigned monetary values for their production.

**available forage** - The amount of forage which may be removed without adversely affecting the vigor of the forage plants. (Normally considered to be about 50 percent of a grass plant.)

**available forest land** - Land which has not been legislatively withdrawn by Congress or administratively withdrawn by the Secretary of Agriculture or Forest Service Chief from timber production.

**average daily traffic (ADT)** - The average 24-hour volume of traffic, being the total volume of traffic during a stated period divided by the number of days in that period. (6)

## B

**background** - In visual management terminology, refers to the visible terrain beyond the foreground and middleground where individual trees are not visible, but are blended into the total fabric of the stand. Also a portion of a view beyond three to five miles from the observer, and as far as the eye can detect objects. (6)

**bald eagle management areas (BEMA's)** - Areas managed for the protection of the threatened and endangered bald eagle. BEMA's provide nesting and roosting habitat for the bird on each plot.

**basal area** - The area of the cross-section of a tree stem near the base, generally at breast height and inclusive of bark. (3)

**base flow** - That portion of the water flowing in a stream which is due to ground water seepage into the channel. (6)

**base sale schedule** - A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity. (This definition expresses the principle of nondeclining flow.) (1)

**basic resource** - One of the principal resources, a resource upon which the production of other resources is dependent; e.g., the production of vegetation is dependent upon basic resources such as soils and water.

**batholith** - A great mass of intruded igneous rock that for the most part stopped its rise a considerable distance below the surface. (10)

**below-cost timber sale** - A sale in which the dollar costs of the sale, including all costs resulting from the sale, are greater than the dollar benefits.

**benchmark** - Reference points that define the bounds within which feasible management alternatives can be developed. Benchmarks may be defined by resource output or economic measures.

**benefit (value)** - Inclusive terms used to quantify the results of a proposed activity, project or program expressed in monetary or nonmonetary terms. (10) Also

**direct benefit** - A primary benefit that responds to specified objectives of the policy, program, project, or expenditure. (10)

**induced benefit** - A primary benefit that is incidental to the objectives of the policy, program, project, or expenditure. (10)

**primary benefit** - A benefit accruing to resource owners from a primary output and that may be direct or induced or may be a residual asset. Primary benefits are components of net public benefits. (10)

**secondary benefit** - A benefit accruing to parties other than the resource owners, including effects on local, Regional, and national economies and on consumers of outputs. Secondary benefits are not necessarily included in net public benefits. (10)

**benefit/cost ratio** - A measure of economic efficiency computed by dividing total discounted primary benefits by total discounted economic costs. (10)

**best management practices** - A practice or combination of practices that is determined by a State (or designated area-wide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation, to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (Federal Register, Volume 40, No. 230 dated 11/28/75)

**big game** - Large mammals hunted for sport. On the National Forest these include animals such as deer, elk, antelope, and bear (8)

**big-game summer range** - See **summer range**

**big-game winter range** - See **winter range**

**biological control** - A method to control insect populations or tree diseases through the use of applied technology Also used in noxious plant control (3)

**biological growth potential** - The average net growth attainable in a fully stocked natural forest stand. (1)

**biological needs** - The combination of habitat factors necessary to sustain an organism through normal life processes

**biological potential** - The maximum production of a selected organism that can be attained under optimum management (8)

**biomass** - The total quantity (at a given time) of living organisms of one or more species per unit of space (species biomass), or of all the species in a biotic community (community biomass).

**biscuit scabland** - Also termed biscuit-swales, mounded topography, and patterned ground. For the purpose of this document, biscuit scabland means natural mounds surrounded by or interspersed with either shallow-soiled swales or scabland The mounds, typically composed of medium-textured soils, are normally capable of supporting a dense cover of grasses, forbs, and occasionally shrubs The swales, typically rocky with somewhat coarser textured soils, are normally sparsely vegetated with grasses, forbs, and moss The scablands are either devoid of vegetative cover or are vegetated by grasses and moss.

**board foot (BF)** - The amount of wood equivalent to a piece of wood one foot by one foot by one inch thick. (3)

**board foot/cubic foot conversion ratio** - Both board foot and cubic foot volumes can be determined for timber stands. The number of board feet per cubic foot of volume varies with diameter, height, and form factors A specific factor by species is applied to the cubic foot FORPLAN outputs to give board foot estimates

**British thermal unit (BTU)** - The quantity of heat required to raise the temperature of one pound of water one degree fahrenheit at or near 39.2 degrees F

**broadcast burn** - Allowing a prescribed fire to burn over a designated area within well-defined boundaries for reduction of fuel hazard or as a silvicultural treatment, or both.

**browse** - Twigs, leaves, and young shoots of trees and shrubs on which animals feed, in particular, those shrubs which are used by big game animals for food (6)

**brush** - A growth of shrubs or small trees usually of a type undesirable to livestock or timber management.

**Bureau of Land Management (BLM)** - An agency within the Department of the Interior, with land management responsibility for the Public Domain lands

**buyback and defaulted timber sales** - In 1984, the Federal Timber Payment Modification Act was enacted by Congress. It allowed private companies to return timber sales not economical to harvest after payment of a fee to the government. The sales returned under the conditions of this Act are known as "buyback" sales. A timber sale is considered "defaulted" if it is not in compliance with the terms of the contract by the contract termination date. Defaulted sales are also returned to the government.

## C

**cable logging** - Refers to methods used to skid or pull logs to a central landing or collection area by a cable connected to a remote power source (6)

**canopy** - The more-or-less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth (3)

**canopy closure** - The progressive reduction in space between tree crowns as they spread laterally (Ford-Robertson 1971), a measure of the percent of potential open space occupied by the collective tree crowns in a stand (8)

**capability** - The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at given levels of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease. (1)

**capability area** - Geographic delineations used to describe characteristics of the land and resources in integrated forest planning. Capability areas may be synonymous with ecological land units, ecosystems, or land response units. (10)

**capital formation** - As used in IMPLAN is defined as the value of purchases from sectors both inside and outside the Region used by individuals, governments, and industries in the area as investment (land, plant, and equipment used in production processes). (10)

**capital investment** - An input that increases the stock of natural or manmade resources (assets) needed to maintain or increase the flow of outputs in the future. Benefits resulting from capital investments are normally recouped in excess of 1 year. (10)

**capital investment** - Activities that create or improve capital assets to obtain benefits occurring during several planning periods (10)



**carrying capacity** - 1) The number of organisms of a given species and quality that can survive in, without causing deterioration of, a given ecosystem through the least favorable environmental conditions that occur within a stated interval of time. 2) In recreation, refers to the number of people that can occupy an area for a given social and experience goal 3) In range, refers to the maximum stocking rate possible on a given range without causing deterioration to vegetation or related resources. (3)

**cave** - Any natural void, cavity, recess, or system of interconnected passages which occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any vug, or any mine, tunnel, aqueduct, or other man-made excavation), and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or manmade. Such term shall include any natural pit, sinkhole, or other feature which is an extension of the cave entrance

**cavity** - The hollow excavated in trees by birds or other natural phenomena, used for roosting and reproduction by many birds and mammals (2)

**channel or stream scour** - Erosion of the channel bottom caused by high flows of water, loss of channel stability, or debris torrents

**characteristic landscape** - In reference to the USDA Forest Service visual management system; the overall impression created by a landscape's unique combination of visual features (land, vegetation, water, structures), as seen in terms of form, line, color and texture, synonymous with "visual landscape character." (6)

**chargeable volume** - All timber volume included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity, based on regional utilization standards. (10)

**clearcutting** - The cutting method that describes the silvicultural system in which the old crop is cleared over a considerable area at one time. Regeneration then occurs from (a) natural seeding from adjacent stands, (b) seed contained in the slash or logging debris, (c) advance growth, or (d) planting or direct seeding. An even-aged forest usually results. (3)

**climatic regimes** - A generalized climatic classification which applies to a specific land area; generally that area can be expected to experience that kind of climate in any given year.

**climax** - The culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition (6)

**climax species** - Those species that dominate a climax stand in either numbers per unit area or biomass.

**closure** - An administrative order restricting either location, timing, or type of use in a specific area

**Code of Federal Regulations (CFR)** - A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. (1)

**coho smolt** - Young coho salmon which are ready to migrate to the sea

**commercial forest land** - Land that is producing, or is capable of producing, crops of industrial wood and (1) has not been withdrawn by Congress, the Secretary of Agriculture, or the Chief of the Forest Service; (2) land where existing technology and knowledge is available to ensure timber production without irreversible damage to soil productivity or watershed conditions, and (3) land where existing

technology and knowledge, as reflected in current research and experience, provides reasonable assurance that adequate restocking can be obtained within 5 years after final harvesting

**commercial thinning** - Any type of tree thinning that produces merchantable material.

**commodity** - A transportable resource with commercial value; all resource products that are articles of commerce. (6)

**common minerals** - See **mineral materials**.

**common varieties** - See **mineral materials**

**community cohesion** - The degree of unity and cooperation within a community in working toward shared goals and solutions to problems.

**community stability** - A community's capacity to handle change without major hardships or disruptions to component groups or institutions. Measurement of community stability requires identification of the type and rate of proposed change and an assessment of the community's capacity to accommodate that level of change (10)

**community types** - A generalized category comprising a number of similar stands of vegetation and including animal life (8)

**compaction** - The packing together of soil particles by forces exerted at the soil surface, resulting in *increased soil density*

**composite** - In reference to planning for special areas under the Land and Water Conservation Act of 1965, an area identified as having unique recreation and/or fish and wildlife values.

**composite plan** - A documented analysis which, at one time was required to justify the use of Land and Water Conservation Funds for acquisition of private lands within a designated composite

**condition class** - 1) Timber: a grouping of timber strata into size-age-stocking classes for Forest planning 2) Range, one of a series of arbitrary categories used to classify range conditions, usually expressed as excellent, good, fair, or poor (9)

**confine** - To limit fire spread within a predetermined area principally by use of natural or preconstructed barriers or environmental conditions. Suppression action may be minimal and limited to surveillance under appropriate conditions. (10)

**congressionally classified and designated areas** - Areas that require congressional enactment for their establishment, such as National Wildernesses, National Wild and Scenic Rivers, and National Recreation Areas.

**constant dollars** - See **real dollars**

**constraint** - In FORPLAN, a limit (either ceiling or floor) which may be placed on the level of inputs to or outputs from a forest.

**consumptive use** - A use of resources that permanently reduces the supply, such as mining (See also **nonconsumptive use**.) (6)

**contain** - To surround a fire, and any spot fires therefrom, with control lines as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions (6184 definition) (10)

**control** - To complete the control line around a fire, any spot fires therefrom, and any interior islands to be saved; burn out any unburned area adjacent to the fire side of the control line; and cool down all hot spots that are immediate threats to the control line, until the line can reasonably be expected to hold under foreseeable conditions. (10)

**conversion period** - The duration of a change from one silvicultural system to another or from one tree species to another (3)

**corridor** - A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. (1)

**corridor avoidance area** - Area with high resource values which are in conflict with power transmission facilities. Used for power facility corridors only when other reasonable choices are not available.

**corridor exclusion area** - Area from which power transmission facilities will be excluded. Classified wilderness is the most common example.

**full corridor** - Approximately 600 feet wide (or wider where existing corridor is wider)

**utility corridor** - A strip of land, up to approximately 600 feet in width, designated for the transportation of energy, commodities, and communications, by railroad, state highway, electrical power transmission (66 KV or more), oil, gas, and coal slurry pipelines 10 inches in diameter and larger, and telecommunication cable and electronic sites for interstate use.

**existing utility corridor** - A strip of land containing one or more existing linear utility rights-of-way which, in the current Forest planning effort, are being included within the designation of a full 600-foot utility corridor in order to facilitate future authorization of additional utility rights-of-way.

**new utility corridor** - A strip of land containing no existing linear utility right-of-way, but warranting designation as a full corridor.

**critical window** - A control point or area (such as a mountain pass) not to be designated within an existing utility corridor, but needed to retain future new utility corridor options.

**transportation corridor** - A strip of land of variable width designated to accommodate the clearing and access control and visual resource limits of a highway or road facility, which may also be designated to accommodate one or more linear utilities

#### **costs -**

**direct cost** - A cost that directly contributes to the production of the primary outputs of an activity, project, or program. (10)

**economic cost** - Total fixed and variable costs for inputs, including costs incurred by other public parties and, if appropriate, opportunity costs and cost savings. (10)

**fixed cost** - A cost that is committed for the time horizon of planning or the decision being considered. Fixed costs include fixed ownership requirements, fixed protection, short-term maintenance, and long-term planning and inventory costs. (10)

**investment cost** - A cost of creating or enhancing capital assets, including costs of administrative or common-use transport facilities and resource management investments. (10)

**joint cost** - A cost contributing to the production of more than one type of output (10)

**non-Forest Service cost** - A cost of investment and operating activities paid by cooperators or other non-Forest Service agencies which are part of Forest Service management programs, or which contribute to the outputs included in the analysis. (10)

**opportunity cost** - The value of a resource's foregone net benefits in its most economically efficient alternative use. (10)

**unit cost or cost per unit** - Total cost of production divided by the number of units produced (10)

**variable cost** - A cost that varies with the level of controlled outputs in the time horizon covered by the planning period or decisions being considered (10)

**cost, capital investment** - The cost of manmade structures, facilities, or improvements in natural resources used as inputs in production processes to produce outputs over one or more planning periods (FSM 1905)

**cost effective** - Achieving specified outputs or objectives under given conditions for the least cost (6)

**cost efficiency** - The usefulness of specified inputs (costs) to produce specified outputs (benefits) In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values, but are achieved at specified levels in the least costly manner Cost efficiency is usually measured using present net value, although use of benefit-cost ratios and internal rate-of-return may be appropriate. (1)

**cost sensitivity analysis** - A type of analysis done to estimate how a particular problem's solution would change if the costs were increased or decreased

**Council on Environmental Quality (CEQ)** - An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters (Abstracted from the National Environmental Policy Act of 1969, as Amended.)

**cover/forage ratio** - The mixture of cover and forage areas on a unit of land, expressed as a ratio.

**created opening** - An opening in the Forest created by the silvicultural practices of final removal harvest of shelterwood; clearcutting; seed tree cutting, or group selection cutting (2)

**critical habitat** - That habitat designated by the Secretary, USDI, as critical to the continued survival of threatened or endangered species

**critical window** - See **corridor**

**crop tree** - Any tree forming, or selected to form, part of the final crop, generally a tree selected in a young stand for that purpose.

**crown closure** - See **canopy closure**.

**crown fire** - A fire that runs through the tops of trees, scrub or brushwood

**crown height** - In a standing tree, the vertical distance from ground level to the base of the crown, measured either to the lowest live branch whorl, or to the lowest live branch (excluding shoots arising spontaneously from buds on the stem of a woody plant), or to a point halfway between (3)

**cubic foot (CF)** - The amount of timber equivalent to a piece of wood one foot by one foot by one foot (3)

**culmination of mean annual increment (CMAI)** - The age at which average annual growth is greatest for a stand of trees. Mean annual increment is expressed in cubic feet measure, and is based upon expected growth according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). Culmination of mean annual increment includes regeneration harvest yields and any additional yields from planned intermediate harvests. (10)

**cultural resource** - The remains of sites, structures, or objects used by humans in the past--historic or prehistoric. (2)

**cumulative effects or impacts** - Cumulative effect or impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7 - these regulations use effects and impacts synonymously.)

**cunit** - One hundred cubic feet of wood chips

**current direction** - The existing direction in approved management plans, continuation of existing policies, standards and guidelines, current budget updated for changing costs over time, and, to the extent possible, production of current levels and mixes of resource outputs

**cutting cycle** - The planned lapse of time between successive cuttings in a stand (6)

## D

**data** - Any recorded measurements, facts, evidence, or observations reduced to written, graphical, tabular, or computer form. The term implies reliability, and therefore provides an explanation of source, type, precision and accuracy. (6)

**debris slide** - A shallow landslide of soil, rock, and organic material that occurs on steep slopes

**debris torrent** - A large debris slide that is charged with water and confined to a steep stream channel. Debris torrents may travel several thousand feet.

**decadent (stands)** - Decaying, deteriorating. (4)

**deer winter range** - See **big-game winter range**

**de facto outputs** - Resource outputs produced from lands not necessarily being managed or allocated for the specific production of these outputs. De facto resource outputs are most commonly recreation and wildlife opportunities. For example, an area may not be allocated to emphasize recreation management and, in fact, may be scheduled for timber harvest in a later decade. However, the area can usually continue to provide recreation opportunities until it is entered for harvesting.

**de facto supply** - In dispersed recreation, those acres that are available for timber harvests but not entered.

**deferred rotation** - A type of grazing management where the grazed area is divided into two or more pastures. One or more of the pastures are grazed for only part of the grazing season. The following season the period of use is rotated. (10)

**DEIS** - See **draft environmental impact statement**

**demand** - The amount of an output that users are willing to take at a specified price, time period, and condition of sale. (10)

**demand analysis** - A study of the factors affecting the schedule of demand for an output, including the price-quantity relationship, if applicable. (10)

**Department of Energy (DOE)** - A department of the Executive branch of the Federal Government which oversees national matters involving the development and use of energy

**departure** - A schedule which deviates from the principle of nondeclining flow by exhibiting a planned decrease in the timber sale and harvest schedule at any time in the future. (10)

**dependent communities** - Communities whose social, economic, or political life would change in important respects if market or nonmarket outputs from the National Forests were substantially decreased.

**designated area (air quality)** - Those areas delineated in the Oregon and Idaho Smoke Management Plans as principal population centers of air quality concern

**design standard** - Approved design and construction specifications used mainly for recreation facilities and roads--includes specified materials, colors, dimensions, etc

**desirable residual vegetation** - The remaining vegetation after application of harvest cutting methods that meets management area objectives. The vegetation may be trees, shrubs, grass, or a combination

**developed recreation** - Recreation that requires facilities that, in turn, result in concentrated use of an area. Examples of developed recreation areas are campgrounds and ski areas; facilities in these areas might include roads, parking lots, picnic tables, toilets, drinking water, ski lifts, and buildings. (2)

**developed recreation site** - Relatively small, distinctly defined areas where facilities are provided for concentrated public use, e.g., campgrounds, picnic areas, swimming areas, and downhill ski areas. (6) (As used in this Plan, includes any recreation site where a capital investment has been made.)

**diameter at breast height (d.b.h.)** - The diameter of a tree measured 4 feet 6 inches above the ground. (6)

**discount rate** - An interest rate that represents the cost or time value of money in determining the present value of future costs and benefits. A "real" discount rate is one adjusted to exclude the effects of inflation. (6) (10)

**discounting** - An adjustment, using a discount rate, for the value of money over time so that costs and benefits occurring in the future are reduced to a common time, usually the present, for comparison (6) FSM 1905

**dispersed recreation** - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, and recreation in primitive environments (2)

**distance zone** - One of three categories used in the Visual Management System to divide a view into near and far components. The three categories are: (1) foreground, (2) middleground, and (3) background.

**diversity** - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan. (2) (1)

**draft environmental impact statement (DEIS)** - The draft statement of environmental effects which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. (6) (In this document, usually refers to the DEIS for the Forest Plan.)

**drop camp** - A camp where an outfitter furnishes transportation only. Clients provide all their own gear. Everything is packed in at the start of the trip and everything is packed out at the end of the trip.

**dry ravel** - The slow to very rapid gravity driven movement of dry soil. Dry ravel usually occurs when the organic materials in the surface few inches of the soil are severely altered by fire. Dry ravel is most likely where soils are medium to coarse textured and slopes are over 60% gradient.

**duff** - Organic matter in various stages of decomposition on the floor of the forest. (4)

**dwarf mistletoe** - Any of a number of relatively host specific plant parasites of the genus *Arceuthobium*. In Northeastern Oregon, ponderosa pine, lodgepole pine, western larch, and Douglas-fir are affected. Spread is via seeds ejected from capsules on the female plant in the late summer to early fall. Impact includes growth reduction, and reduced quality and quantity of seed. Severely infected trees may be killed outright or rendered susceptible to attack by other pests.

## E

**early forest succession** - The early stage or condition of a plant community that occurs during its development from bare ground to climax. (6)

**ecoclass** - A classification system for identification and mapping of basic vegetative resources and their characteristics.

**economic efficiency** - The usefulness of inputs (costs) to produce outputs (benefits) and effects when all costs and benefits that can be identified and valued are included in the computations. Economic efficiency is usually measured using present net value, though use of benefit-cost ratios and rates-of-return may sometimes be appropriate. (10)

**economic growth** - Increased economic output in real terms over time (6)

**economic impacts** -

**direct economic impact** - Effects caused directly by forest product harvest or processing or by forest uses (10)

**indirect economic impact** - Effects that occur when supporting industries sell goods or services to directly affected industries (10)

**induced economic impact** - Effects that occur when employees or owners of directly or indirectly affected industries spend their income within the economy. (10)

**ecosystem** - An interacting system of organisms considered together with their environment; for example, marsh, watershed, and lake ecosystems (2)

**edge** - An area where plant communities meet or where successional stages or vegetation conditions within the plant communities come together. (2)

**effects** - Environmental changes resulting from an action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems

Effects and impacts as used in this FEIS are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or healthy effects, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial (40 CFR 1508.8, 2)

**electronic sites** - Areas designated for the operation of equipment which transmits and receives radio signals (excluding television aerials and antennas) for individual pickup of programming, and passive reflectors.



**empirical yield table** - A table showing, for one or more given species on a given site, the progressive development of a timber stand at periodic intervals covering the greater part of its useful life. This table is prepared on the basis of actual average stand conditions.

**employment** - Labor input into a production process, measured in the number of person-years or jobs. A person-year is 2,000 working hours by one person working year long or by several persons working seasonally. (10)

**endangered species** - Any species of animal or plant that is in danger of extinction throughout all or a significant portion of its range. Plant or animal species identified by the Secretary of the Interior as endangered in accordance with the 1973 Endangered Species Act. (6)

**ending inventory constraint** - The standing volume left in the inventory at the end of the planning horizon. The constraint insures that there is enough standing inventory at the end of the planning horizon to perpetuate long-term sustained yield capacity harvest levels on a nondeclining flow basis.

**environment** - The aggregate of physical, biological, economic, and social factors affecting all organisms in an area.

**environmental analysis** - A comprehensive evaluation of alternative actions and their predictable short- and long-term environmental effects, which include physical, biological, economic, social, and environmental design factors and their interactions. (2)

**environmental assessment** - The concise public document required by the regulations for implementing the procedural requirements of the National Environmental Policy Act. (40 CFR 1508.9, 2)

**environmental impact statement (EIS)** - A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal. (6)

**Environmental Protection Agency (EPA)** - An agency of the Executive Branch of the Federal Government which has the responsibility for environmental matters of national concern.

**ephemeral draw** - A drainage way which conveys surface water for short periods of time in direct response to snowmelt or rainfall runoff. Form in slight depressions in the natural contour of the ground surface but do not normally develop sufficient flow to wash or scour their channels. Can usually be identified by the presence of needles or other litter in the depressions.

**erosion** - (1) The wearing away of the land surface by running water, wind, ice, or other geologic agents, including such processes as gravitational creep, or (2) detachment and movement of soil or rock fragments by water, wind, ice, or gravity. The following terms are used to describe different types of erosion:

**accelerated erosion** - Erosion which is much more rapid than natural erosion, with the increase in erosion rate resulting primarily from the influence of human activities, or, in some cases, of other events that expose mineral soil surfaces, such as wildfire.

**gully erosion** - The erosion process whereby water accumulates in narrow channels, and over short periods, removes the soil from this narrow area to considerable depths, ranging from 4 inches to as much as 75 to 100 feet.

**rill erosion** - An erosion process in which numerous small channels less than 4 inches deep and 6 inches wide are formed

**sheet erosion** - The removal of a fairly uniform layer of soil from the land surface by runoff water.

**eutrophic** - Of habitats, particularly soils and water, that are rich or adequate in nutrients (3)

**even-aged management** - The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands. (1)

**even-aged stands** - Stands in which all trees are of about the same age (A spread of 10 to 20 years is generally considered one age class.) Cutting methods producing even-aged stands are clearcut, shelterwood, or seed tree systems

**exchange reserved** - Lands which have been added to the National Forest System by exchange under the General Exchange Act for reserved/proclaimed National Forest System Lands.

**existing visual condition (EVC)** - An inventory of existing visual impacts as seen from sensitive travel corridors or use areas; measures visual changes to the landscape caused by natural or human activities.

**exports** - As used in IMPLAN are defined as outputs or products produced but not consumed or used in production of other outputs in the impact area. Includes both exports to other areas of the U.S. and international exports (10)

**extensive forest management** - A low investment level of management on regulated timberlands that requires initial harvest, regeneration, and final harvest. Some precommercial thinning may be done to prevent stagnation and disease buildup.

## F

**fault** - A ground surface fracture or fracture zone along which there has been a displacement of one side with respect to the other. (6)

**fault scarp** - An abrupt change in surface elevation resulting from earthquake activity. Fault scarps may vary from as little as a few inches to two or three thousand feet

**fawn rearing habitat** - Areas used regularly by female deer for fawn raising; optimum fawning habitat includes low shrubs or small trees under an overstory of about 50% closure, usually located on slopes of less than 15 percent where vegetation is succulent and plentiful in June, and water is available within 183 meters (8)

**feral** - Non-native species, or their progeny, which were once domesticated but have since escaped from captivity and are now living free (6)

**FIL** - See **fire intensity level**

**final cut** - See **final removal harvest**.

**final environmental impact statement** - The final version of the statement of environmental effects required for major federal actions under section 102 of the National Environmental Policy Act. It is a revision of the draft environmental impact statement to include public and agency responses to the draft. (6)

**final removal harvest** - The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood system. (6)

**fire intensity level** - Fire intensity level, a measure of heat released over time by the flaming front of a fire, indicated by flame length (i.e., FIL 1 = 0-2 ft; FIL 2 = 2-4 ft)

**fire management** - All activities required for protection of resources from fire and for the use of fire to meet land management goals and objectives. (6)

**fire risk** - Potential for a fire start, natural or human-caused.

**fisheries habitats** - Streams, lakes, and reservoirs that support fish populations.

**flood plain** - The lowland and relatively flat area adjoining inland waters, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year. (2)

**forage** - All browse and nonwoody plants that are available to livestock or game animals and used for grazing or harvested for feeding (6)

**forb** - Any herb other than grass, sedges, or rushes. (7)

**foreground** - A term used in visual management to describe the portions of a view between the observer and up to 1/4 to 1/2 mile distant. (6)

**Forest and Rangeland Renewable Resources Planning Act of 1974** - An Act of Congress requiring the preparation of a program for the management of the National Forests' renewable resources, and the preparation of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources. (6)

**forest land** - Land at least 10 percent occupied by forest trees or formerly having had such tree cover and not currently developed for nonforest use. Lands developed for nonforest use include areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, and adjoining road clearings and powerline clearings of any width (1) (10)

**forest program** - The summary or aggregation of project or activity information that makes up an integrated (multifunctional) course of action for a given level of funding on a National forest that is consistent with the Forest Plan

**forest-range environmental study (FRES) levels** - Various range management intensities developed to reflect the degree of range utilization. FRES levels measure the amount of native forage available to livestock for consumption under these different intensities. Developed in a Forest Service

report entitled "The Nation's Range Resources -- A Forest-Range Environmental Study," Forest Resources Report No. 19

**Forest Service Handbook (FSH)** - For Forest Service use, directives that provide detailed instructions on how to proceed with a specialized phase of a program or activity. (10)

**Forest Service Manual (FSM)** - A system of manuals which provides direction for Forest Service activities.

**forest system roads** - Roads that are part of the Forest development transportation system, which includes all existing and planned roads as well as other special and terminal facilities designated as Forest development transportation facilities. (See **roads** )

**forest type** - A classification of forest land based upon the tree species presently forming a plurality of basal area stocking in live trees.

**formally dedicated area** - An area of the Forest set aside for a specific use by virtue of a formal ceremony or congressional designation.

**FORPLAN** - A linear programming system used for developing and analyzing forest planning activities (10)

**free-to-grow** - A term used by silviculturists to indicate that trees are free of growth restraints, the most common of which is competing over-topping vegetation

**fuel break** - A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire Fuel breaks are designated or constructed before the outbreak of a fire. Fuel breaks may consist of one or a combination of the following: natural barriers, constructed fuel breaks, constructed barriers (6)

**fuel hazard** - A supply of fuel that forms a special threat of ignition or suppression difficulty

**fuel management** - The practice of planning and executing the treatment or control of living or dead vegetative material in accordance with fire management direction. (10)

**fuel treatment** - The rearrangement or disposal of natural or activity fuels (generated by management activity, such as slash left from logging) to reduce fire hazard Fuels are defined as both living and dead vegetative materials consumable by fire

**fuels** - Combustible wildland vegetative materials While usually applied to above ground living and dead surface vegetation, this definition also includes roots and organic soils such as peat. (10)

**full-service management** - Management of developed recreation sites to furnish the full range of amenities and maintenance for the public enjoyment Management objectives are based on site capacity, site protection needs, seasonal demands for public use, and desired levels of service to enhance visitor's experience and convenience and provide optimum maintenance.

**furbearing species** - See **game species**

## G

**game species** - Any species of wildlife or fish for which seasons and bag limits have been prescribed and which are normally harvested by hunters, trappers, and fishermen under state or federal laws, codes, and regulations. (6)

**genetic seedlings** - Tree seedlings from a genetically superior seed source. The seeds are collected from trees displaying exceptional form and raised in nurseries before outplanting. The seedlings usually have faster growth rates than naturally regenerated seedlings.

**geomorphology** - The science that deals with land and submarine relief features of the earth's surface and seeks a genetic interpretation of them, using the principles of physiography in its descriptive aspects and dynamic and structural geology in its explanatory phases. (6)

**geothermal** - Of or pertaining to the internal heat of the earth. (4)

**goal** - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed. (2) (1)

**goods** -

**nonmarket good** - An output that is not normally exchanged for money in a market. Usually no market has evolved because ownership of the good is not clear, exclusive use is not possible under current laws, or it is not possible to consistently define good. (10)

**public good** - An output for which it is impractical to impose a charge, either because it must be supplied to all if it is supplied to one or because the costs of collection and control exceed likely revenue. (10)

**goods and services** - The various outputs, including on-site uses, produced from forest and rangeland resources. (2,1)

**grass/forb** - An early forest successional stage where grasses and forbs are the dominant vegetation.

**group selection cutting** - See **uneven-aged silvicultural systems**

**growing season** - That part of the year when temperature and moisture are favorable for vegetation growth.

**guideline** - An indication or outline of policy or conduct, i.e., any issuance that assists in determining the course of direction to be taken in any planned action to accomplish a specific objective. (2)

**guzzler** - A device for collecting and storing precipitation for use by wildlife or livestock. Consists of an impenetrable water collection area, a storage facility, and a trough from which animals may drink. (9)

## H

**habitat** - The place where a plant or animal naturally or normally lives or grows (2)

**habitat capability** - The estimated ability of an area, given existing or predicted habitat conditions, to support a wildlife, fish or plant population. It is measured in terms of potential population numbers.

**habitat diversity** - The distribution and abundance of different plant and animal communities and species within a specific area.

**hardwood** - A broad-leaved flowering tree.

**harvest cutting method** - A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results in forests of distinctive form and character. Harvest cutting methods are classified as even-aged and uneven-aged.

**harvest dispersion (factor)** - The dispersion of cutting units over the land base in order to meet clearcut size limitations, or other resource constraints. An example of a harvest dispersion constraint is, no more than 25 percent of an analysis area may be harvested in one decade.

**HCNRA** - Hells Canyon National Recreation Area

**headwaters** - The upper tributaries of a river. (4)

**herbaceous** - An adjective describing seed-producing plants that do not develop persistent woody tissue, but die down to ground level at the end of the growing season.

**herbicide** - A chemical substance used for killing plants (8)

**high-site timbered lands** - A relative measure of resource productivity.

**historic site** - Site associated with the history, tradition, or cultural heritage of national, state, or local interest, and of enough significance to merit preservation or restoration (6)

**hydrology** - The scientific study of the properties, distribution and effects of water in the atmosphere, on the earth's surface, and in soil and rocks.

## I

**ID team** - See **interdisciplinary team**

**impacts** - See **effects**

**impact analysis area** - The delineated area subject to significant economic and social impacts from Forest Service activities included in an economic or social impact analysis.

**impact analysis subarea** - A specific area within an analysis area that is subject to localized economic or social impacts from Forest Service activities.

**impact, economic, direct** - Impacts, caused directly by forest product harvest or processing, or forest uses.

**impact, economic, indirect** - Impacts that arise from supporting industries selling goods or services to directly-affected industries.

**impact, economic, induced** - Impacts resulting from employees or owners of directly or indirectly-affected industries spending their income within the economy.

**IMPLAN** - A computer-based system used by the Forest Service for constructing nonsurvey input/output models to measure economic input. The system includes a data base for all countries in the U.S. and a set of computer programs to retrieve data and perform the computational tasks for input/output analysis. (10)

**imports** - As used in IMPLAN are defined as purchases of products for use in production of other products and for final consumption from outside the impact area. Includes both imports from other areas of the U.S. and international imports. Competitive imports are the same as local domestic products which are not produced in quantities sufficient to meet local demands or which obtain a share of the local market formerly supplied by local producers. Noncompetitive imports are products not produced locally. (10)

**improved genetic stock** - Group of plants (trees) that have been improved genetically (4)

**income** - Employee compensation, profits, rents, and other payments to households (10)

**indicator species** - See **management indicator species**

**indirect outputs** - Outputs caused by an action, but which are later in time or farther removed in distance, although still reasonably foreseeable. (See **effects**)

**individual (single) tree selection** - See **uneven-aged silvicultural systems**

**induced outputs** - Outputs in the private sector induced by the direct outputs produced on the Forest (6)

**influence zone** - See **zone of influence**

**input/output analysis** - A quantitative study of the interdependence of a group of activities, based on the relationship between inputs and outputs of the activities. The basic tool of analysis is an input-output model for a given period that shows simultaneously for each economic sector the value of inputs and outputs, as well as the value of transactions within each economic sector. It has especially been applied to estimate the effects of changes in Forest output levels on local economic activity. (3)

**instream flows** - A prescribed level (or levels) of streamflow, usually expressed as a stipulation in a permit authorizing a dam or water diversion, for the purpose of meeting National Forest System management objectives

**INTEGER** - A computer model used to integrate Forest social and economic data.

**integrated pest management** - A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated population on various resource values, alternative regulation tactics and strategies, and benefit/cost estimates of those alternative strategies

Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system, and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable. (2) (1)

**integrated resource management** - A management strategy which emphasizes no resource element to the exclusion or violation of the minimum legal standards of others. (FSM 1905)

**intensive grazing management** - Grazing management that controls distribution of cattle and duration of use on the range, usually by fences, so parts of the range are rested during the growing season. (See also **quality extensive management**; **quality intensive management**.)

**intensive management (intensive forest management)** - A high investment level of timber management that includes use of precommercial thinnings, commercial thinnings, genetically improved stock, and control of competing vegetation. (2)

**interdisciplinary team (ID team)** - A group of individuals with different training assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad to adequately solve the problem. (6)

**intermediate cutting** - Any removal of trees from a stand between the time of its formation and the regeneration cut. Most commonly applied intermediate cuttings are release, thinning, improvement, and salvage. (6)

**intermingled ownerships** - Lands within the National Forest boundaries or surrounded by National Forest lands that are owned by private interests or other government agencies

**intermittent stream** - A stream that runs water in most months, but does not run water during the dry season during most years

**interpretive services** - Visitor information services designed to present educational and recreational values to Forest visitors to enhance their understanding, appreciation, and enjoyment of the Forest.

**intrusive** - (rock) having been forced while in a plastic state into cavities or between layers (of other rock). (6)

**inventory data and information collection** - The process of obtaining, storing, and using current inventory data appropriate for planning and managing the Forest. (6)

**irretrievable** - Applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible. (10)

**irreversible** - Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options. (10)

**issue** - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process. (See also **public issue**) (2)



## K

**Knutson-Vandenberg Act (K-V)** - An act of Congress which among other things authorizes the Forest Service to use funds collected from timber sales for tree planting, timber stand improvement, and other forest uses.

## L

**Land and Water Conservation Fund (L&WCF)** - Funds collected from sales of surplus Government real property, motorboat fuels taxes, recreation use fees, etc. which are available to purchase and develop certain qualifying lands for recreational purposes.

**land class** - The topographic relief of a unit of land. Land classes are separated by slope, which coincides with the timber inventory process. The three land classes used in the Fremont National Forest Plan are defined by the following slope ranges: 0 to 40 percent; 40 to 60 percent, and greater than 60 percent.

**land exchange** - The conveyance of nonfederal land and/or interests in exchange for National Forest System land or interests in land.

**landform** - An area of that is defined by its particular combination of bedrock and soils, erosion processes and climatic influences.

**landing** - Any place where round timber is assembled for further transport, commonly with a change of method (3)

**land management** - The intentional process of planning, organizing, programming, coordinating, directing, and controlling land use actions (6)

**land management planning** - The process of organizing the development and use of lands and their resources in a manner that will best meet the needs of people over time, while maintaining flexibility for a combination of resources for the future.

**landownership pattern** - The National Forest System resource land base, in relation to other land ownerships within given boundaries (2)

**landscape management** - The art and science of planning and administering the use of Forest lands in such ways that the visual effects maintain or upgrade human psychological welfare. The planning and design of the visual aspects of multiple-use land management.

**lands not appropriate for timber production** - Includes lands that: 1) are proposed for resource uses that preclude timber production, such as Wilderness; 2) have other management objectives that limit timber production to the point where management requirements set forth in CFR 219.27 cannot be met; or 3) are not cost efficient over the planning horizon in meeting forest objectives including timber production (1)

**lands not suited (unsuitable) for timber production** - Includes lands that: 1) are not forest land as defined in CFR 219.3; 2) are likely, given current technology, to suffer irreversible resource damage to soils productivity, or watershed conditions; 3) cannot be adequately restocked as provided in 36

CFR 219.27(c)(3); or, 4) have been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service. In addition, Forest lands other than those that have been identified as not suited for timber production shall be reviewed and assessed prior to formulation of alternatives to determine the costs and benefits of a range of management intensities for timber production. (1)

**lands suitable for timber production** - Includes all lands not classified as either Not Suited or Not Appropriate for Timber Production

**landtype** - A portion of the Forest mapped in the Siuslaw National Forest Soil Resource Inventory that has a defined arrangement of specific landforms that reacts to management activities in generally predictable ways. Landtypes range from 60 to 600 acres in size.

**landtype association** - A group of landtypes that make up a large portion of the Forest. The landtypes are sufficiently homogeneous to be considered as a whole for modeling the future outputs and effects of planned management activities. Landtype Associations do not usually follow watershed boundaries and are defined on the basis of general similarities in geology, climate, landform and vegetation. Landtype Associations on the Forest range in size from 14,000 to 93,000 acres.

**land use allocation** - The commitment of a given area of land or a resource to one or more specific uses--for example, to campgrounds or wilderness. (6)

**leasable minerals** - Coal, gas, oil, phosphate, sodium, potassium, oil shale, sulphur, geothermal steam. Also includes other minerals on acquired National Forest Lands. (6)

**least-cost analysis** - Determination of the least cost means of attaining specified results. (10)

**Level IV Law Enforcement Officer** - A Forest Service employee who has graduated from the Federal Law Enforcement Academy and holds a law enforcement commission signed by the Regional Forester. District Level IV officers generally perform other duties as well as law enforcement.

**lifestyle** - The characteristic way people live, indicated by consumption patterns, work, leisure, and other activities. (10)

**linear programming** - A mathematical method used to determine the cost-effective allocation of limited resources between competing demands when both the objective (e.g., profit or cost) and the restrictions on its attainment are expressible as a system of linear equalities or inequalities. (6)

**locatable minerals** - Those hardrock minerals which can be obtained by filing a claim on Public Domain or National Forest System lands reserved from the Public Domain. In general, the locatable minerals are those hardrock minerals which are mined and processed for the recovery of metals, but may also include certain nonmetallic minerals and uncommon varieties of mineral materials. (6)

**lode mining** - The mining of a valuable mineral which occurs as a tabular deposit between definite, contrasting mineral or rock boundaries. (6)

**logging residues** - See **slash**.

**long-span cable system** - In timber harvesting, any cable logging system capable of yarding logs at distances greater than 2,000 feet.

**long-term** - Greater than ten years.

**long-term sustained yield timber capacity (LTSY)** - The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity, consistent with multiple-use objectives (1)

**low income** - Household income below the poverty level as defined by the U S Department of Health and Human Services. (10)

## M

**management area** - An area with similar management objectives and a common management prescription (1) (10)

**management concern** - An issue, problem, or condition which influences the range of management practices identified by the Forest Service in the planning process (1)

**management direction** - A statement of multiple use and other goals and objectives, and the associated management prescriptions, and standards and guidelines for attaining them (1)

**management emphasis** - That portion of a management scheme which receives the most stress or is of the greatest significance or importance. It may be the resources being produced, or it may be the way in which they are produced.

**management indicator species** - A species selected because its welfare is presumed to be an indicator of the welfare of other species using the same habitat. A species whose condition can be used to assess the impacts of management actions on a particular area. (8)

**Management Information Handbook (MIH) codes** - An accounting system that labels each Forest activity or budget item with a code to identify that activity in a consistent manner. Normally used for budgeting purposes.

**management intensity** - The management practices or combination of management practices and associated costs to obtain different levels of goods and services (1). In FORPLAN management prescriptions, a set of activities designed to accomplish a particular management emphasis (See also **management prescriptions**).

**management practice** - A specific activity, measure, course of action, or treatment. (1)

**management prescription** - The management practices and intensity selected and scheduled for application on a specific area to attain multiple use and other goals and objectives (1). In FORPLAN, the combination of a management emphasis and associated management intensities with a variety of timing choices for implementation. (2)

**management requirement (MR)** - Minimum standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, soil and water diversity, to be met in accomplishing National Forest System goals and objectives. (1)

**marginal cover** - A stand of coniferous trees 10 or more feet (3 or more meters) tall, with an average canopy closure equal to or more than 40 percent (11)

**market** - The processes of exchanging a good or service for money or other goods or services according to a customary procedure. A market may occur in a specific place or throughout an area by individual transactions. (10)

**market area** - The area from which a market draws or to which it distributes its goods or services and for which the same general price structure and price influences prevail. (10)

**market assessment** - A market study describing sources of supply and demands for goods or service, pricing processes, and influences on value. (10)

**market value** - The unit price of an output normally exchanged in a market after at least one stage of production. Market value is expressed in terms of prices as evidenced by market transactions. (10)

**mass movement** - A general term for any of the variety of processes by which large masses of earth material are moved downslope by gravitational forces - either slowly or quickly. (6)

**mature timber** - Trees that have attained full development, particularly height, and are in full seed production. (3)

**maximum modification** - See **visual quality objective**.

**MBF** - Thousand board feet

**MCF** - Thousand cubic feet

**mean annual increment of growth** - The total volume of a tree or stand of trees up to a given age divided by that age. (2)

**mesotrophic** - Habitats, particularly soil and water, of moderate nutrient capacity. (3)

**middleground** - A term used in visual management to describe the portions of a view extending from the foreground zone out to 3 to 5 miles from the observer. (6)

**MIH** - Management Information Handbook.

**mineral entry** - The filing of a mining claim upon public domain or related land to obtain the right to any minerals it may contain. (6)

**mineral entry withdrawal** - The exclusion of mining locations and mineral development work on areas required for administrative sites by the Forest Service and other areas highly valued by the public. (6)

**mineral materials** - Deposits such as sand, stone, gravel, and clay. (6)

**mineral soil** - Weathered rock materials usually containing less than 20 percent organic matter. (6)

**minimum level management** - FORPLAN term designating lands that will not be actively managed for timber or forage production. Often, these are lands that have high costs and low benefits associated with their management.

**minimum streamflows** - A specified level of flow through a channel that must be maintained by the users of streams for biological, physical, or other purposes.

**mining claim** - A portion of the public lands which a miner, for mining purposes, takes and holds in accordance with mining laws. (6)

**minority** - Persons as specified in Directive 15, Office of Federal Statistical Policy and Standards, U. S. Department of Commerce, Statistical Policy Handbook (1978). Generally identified as one of the following four categories: Alaskan native or American Indian, Asian or Pacific Islander, Black, Hispanic. (10)

**mitigation** - Mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action, (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment, (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and, (e) compensating for the impact by replacing or providing substitute resources or environments (40 CFR Part 1508.20)

**mitigation measures** - Actions to avoid, minimize, reduce, eliminate, or rectify adverse impacts of management practices.

**MMBF** - Million board feet.

**MMCF** - Million cubic feet.

**MMRVD** - Million recreation visitor day.

**MRVD** - Thousand recreation visitor day

**model** - A representation of reality used to describe, analyze, or understand a particular concept. A "model" may be a relatively simple qualitative description of a system or organization, or a highly abstract set of mathematical equations (6)

**modification** - See **visual quality objective**.

**monitoring and evaluation** - The periodic evaluation of Forest Plan management practices on a sample basis to determine how well objectives have been met.

**mortality** - In wildlife management, the loss in a population from any cause, including hunter kill, poaching, predation, accident, and disease. In forestry, trees in a stand that die of natural causes (8)

**mountain pine beetle** - A tiny black insect, ranging in size from 1/8 to 3/4 inch, that bores its way into a tree's cambium and cuts off its supply of nutrients, thus killing the tree.

**multiple use** - The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions, that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land and with consideration being given to the relative values of the various resources; and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (1)

**multiplier** - A ratio of a measure of total change in income or employment to the direct income or employment change. The measure to total change may be direct plus indirect change (Type I)

Multipliers); or direct, indirect, and induced change (Type II Multipliers), or direct, indirect, and interactive increased induced demands based on population increase (Type III Multipliers) (10)

**municipal watershed** - A watershed which provides water for human consumption, where Forest Service management could have a significant effect on the quality of water at the intake point, and that provides water utilized by a community or any other water system that regularly serves: 1) at least 25 people on at least 60 days in a year, or 2) at least 15 service connections. In addition to cities, this includes campgrounds, residential developments, and restaurants (10)

## N

**National direction** - Statements of missions, goals, and objectives that guide Forest Service planning. (FSM 1905)

**National Environmental Policy Act (NEPA) of 1969** - An Act to declare a National policy which will encourage productive and enjoyable harmony between humankind and the environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, to enrich the understanding of the ecological systems and natural resources important to the Nation, and to establish a Council on Environmental Quality (The Principal Laws Relating to Forest Service Activities, Agriculture Handbook No 453, USDA, Forest Service, 359 pp.)

**National Forest Land and Resource Management Plan** - A Plan which ". . . shall provide for multiple use and sustained yield of goods and services from the National Forest System in a way that maximizes long-term net public benefits in an environmentally sound manner" (1)

**National Forest Management Act (NFMA)** - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Regional Guides and Forest Plans and the preparation of regulations to guide that development

**National Forest System (NFS)** - All National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat 525, 7 U.S.C. 1010-1012), and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system (16 U.S.C. 1608)

**National recreation trails (NRT)** - Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the National system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses. (6)

**National Register of Historic Places** - A listing (maintained by the U.S. National Park Service) of areas which have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the Nation (6)

**National Wilderness Preservation System** - All lands covered by the Wilderness Act and subsequent Wilderness designations, regardless of the governmental department having jurisdiction

**natural barrier** - A natural feature that restricts livestock or wildlife movements, such as a dense stand of trees or a cliff.

**natural regeneration** - Reforestation of a site by natural seeding from the surrounding trees. Natural regeneration may or may not be preceded by site preparation.

**net cash flow** - The difference between the annual receipts of an alternative and costs required to implement that alternative.

**net public benefits** - An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs), whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield. (1)

**net receipts** - Receipts minus costs.

**net returns to the treasury, net cash flow** - The difference between the total dollar receipts projected for an alternative and the total budget required to implement the alternative.

**nitrogen-fixing (nitrogen fixation)** - Conversion of free nitrogen by plants such as red alder into combined forms useful in nutrient cycles and other functions in the biosphere.

**nominal value** - A monetary value relative to time that does not account for the effects of inflation.

**nonchargeable volume** - All volume not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity. (FSH 2409.13)

**noncommodity outputs** - Resource outputs that are not normally bought and sold, or cannot be bought and sold, such as air quality or scenic beauty.

**nonconsumptive use** - That use of a resource that does not reduce the supply. For example, nonconsumptive use of water includes hydroelectric power generation, boating, swimming, and fishing. (2)

**nondeclining flow** - Where the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity. (1)

**nonforest land** - Lands that never have had or that are incapable of having 10 percent or more of the area occupied by forest trees; or lands previously having such cover and currently developed for nonforest use. (6)

**nongame species** - Animal species which are not hunted, fished, or trapped.

**nonmarket value** - The unit price of a nonmarket output normally not exchanged in a market at any stage before consumption, it is thus necessary to impute nonmarket value from other economic information. (10)

**nonmarket valued outputs** - Assessed value of a goods or service which is not traded in the market place and has no market value. Because it is not bought and sold, some measure other than price must be used in establishing the value. (6)

**nonpoint source pollution** - Pollution whose source is general rather than specific in location. It is widely used in reference to agricultural and related pollutants-- for example, production of sediments by logging operations, agricultural pesticide applications, or automobile exhaust pollution. (6)

**nonpriced outputs** - Nonpriced outputs are those for which there is no available market transaction evidence and no reasonable basis for estimating a dollar value. Subjective nondollar values are given to nonpriced outputs

**no surface occupancy** - A clause used in mineral leases to prevent activities in sensitive areas. Sometimes results in closure of an area and sometimes has little impact if directional drilling can tap resources underlying restricted area.

**noxious weeds** - Undesirable plant species that are unwholesome to the range or to animals (6)

## O

**objective** - A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals. (1)

**off-road vehicle (ORV)** - Vehicles such as motorcycles, all-terrain vehicles, four-wheel drive vehicles, and snowmobiles (2)

**old-growth deficit** - A forest without the excess volume of mature/overmature old-growth trees that could be used to offset reductions in programmed harvest volume resulting from allocation changes.

**old-growth habitat** - Habitat for certain wildlife that is characterized by overmature coniferous forest stands with large snags and decaying logs.

**old-growth stand (old growth)** - Any stand of trees 10 acres or greater generally containing the following characteristics. 1) contain mature and overmature trees in the overstory and are well into the mature growth stage, 2) will usually contain a multilayered canopy and trees of several age classes, 3) standing dead trees and down material are present, and 4) evidences of man's activities may be present, but do not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand (2) (In this Forest Plan, old-growth stands less than 30 acres in size were generally not tracked.)

**oligotrophic** - Lakes characterized by a low accumulation of dissolved nutrient salts, supporting only sparse plant and animal life, and having a high oxygen content, owing to the low organic content. (4)

**open roads** - Any roads which are not blocked or closed to all standard vehicle use (excluding ATV or over-the-snow vehicles) for a full year Seasonal closures do not constitute a "closed" road

**open to entry** - With respect to minerals management, lands available to occupy under the mining laws.

**operational costs** - Those costs associated with administering and maintaining National Forest facilities and resource programs

**operational plan** - A document approved by the Forest Supervisor which specifies at the project level, implementation of the management direction established in the Forest Plan. (6)

**opportunity** - A proposal that is considered in developing alternative activities, projects or programs where an option exists to invest profitably to improve or maintain a present condition



**opportunity cost** - The dollar-quantifiable net loss resulting from selecting a less efficient course of action

**output** - A good, service, or on-site use that is produced from forest and rangeland resources. See FSH 1309.11 for forest and rangeland outputs codes and units measure. Examples: X06-Softwood Sawtimber Production MBF; X80-Increased Water Yield - Acre Feet; W01-Primitive Recreation Use RVD's. (FSM 1905)

**output, controlled** - The amount of an output which management has the legal and practical ability to control with management activities. (10)

**output, market** - A good, service, or on-site use that can be purchased at a price. (FSM 1905)

**output, noncontrolled** - The amount of an output which will occur regardless of management activity (10)

**output, nonmarket** - A good, service, or on-site use not normally exchanged in a market (FSM 1905)

**overbid** - To bid more than the appraised value. (4)

**overgrazing** - Continued overuse (year after year) creating a deteriorated range

**overgrazed range** - A range that has deteriorated and may still be deteriorating from its productive potential due to overgrazing.

**overmature timber** - The stage at which a tree declines in vigor and soundness, for example, past the period of rapid height growth. (2)

**overstory** - That portion of the trees, in a Forest or in a stand of more than one story, forming the upper or uppermost canopy. (3)

**overuse (overutilization)** - Utilizing an excessive amount of the current year's growth which, if continued, will result in overgrazing and range deterioration

**overwood removal** - A harvest method that removes the overstory of a two-story stand and leaves the smaller understory for further treatment (thinning or harvesting)

## P

**P & M** - Fund appropriated by Congress for protection and management of the Forest.

**partial cut** - *Covers a variety of silvicultural practices where a portion of the stand is removed and a portion is left.*

**partial retention** - See **visual quality objective**

**particulates** - See **total suspended particulates**.

**payment in lieu of taxes (PILOT)** - Payments to local or State governments based on ownership of Federal land and not directly dependent on production of outputs or receipt sharing. Specifically, they

include payments made under the payments in Lieu of Taxes Act of 1976 by U. S. Department of the Interior. (10)

**payments to counties** - See **payment in lieu of taxes**.

**perennial stream** - A stream that flows year round

**permittee** - Any person or business formally allowed to graze livestock on the land of another person or business (e.g.; on state or federal land). (3)

**personal use** - Normally used to describe the type of permit issued for removal of wood products (firewood, post, poles, and Christmas trees) from National Forest land when the product is for home use and not to be resold for profit

**persons-at-one-time (PAOT)** - A recreation capacity measurement term indicating the number of people who can use a facility or area at one time. (2)

**pests** - Any animal or plant that, during some portion of its life cycle, inhibits the establishment or growth of some other species of plant or animal favored by man

**phenology** - The science dealing with the influence of climate on the recurrence of such annual phenomena of animal and plant life as bird migrations, budding, etc. (4)

**physiographic province** - A Region having a particular pattern of relief features or land forms that differs significantly from that of adjacent Regions. (6)

**pioneer species** - A plant capable of invading bare sites (e.g., a newly exposed soil surface) and persisting there, i.e., "colonizing" them, until supplanted. (3)

**placer mining** - The extraction of valuable heavy minerals from a mass of sand, gravel, or other similar alluvial material by concentration in running water. (6).

**planned ignition** - A fire started deliberately, and controlled to accomplish a resource management objective.

**planning area** - The area of the National Forest System covered by a Regional guide or forest plan (1)

**planning criteria** - Criteria prepared to guide the planning process. Criteria applied to collection and use of inventory data and information, analysis of the management situation, and the design, formulation, and evaluation of alternatives. (1)

**planning horizon** - The overall time period considered in the planning process. It spans all activities covered in the analysis or plan and all future conditions and effects of proposed actions which would influence the planning decisions (1). In this FEIS and Forest Plan, the planning horizon is considered to be 15 decades.

**planning period** - One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits. (1)

**planning records** - The body of information documenting the decisions and activities which result from the process of developing a Forest Plan, revision, or significant amendment.

**plan of operations** - A document required from any person proposing to conduct mineral-related activities which utilize earth moving equipment and which will cause disturbance to surface resources or involve the cutting of trees (36 CFR 228.4)

**pole/sapling** - A Forest successional stage in which trees between five and nine inches in diameter are the dominant vegetation. (See also **size class**)

**pole timber** - Trees of at least five inches in diameter at breast height, but smaller than the minimum utilization standard for sawtimber (See also **size class**.)

**policy** - A guiding principle upon which is based a specific decision or set of decisions (FSM 1905)

**potential yield** - (*This term is in reference to the 1962 Timber Management Plan only*) Optimum sustained yield of timber harvest volume attainable with intensive forestry on available commercial forest land (forest lands able to produce 20 cubic feet of timber per acre per year or more).

**practices** - Those management activities that are proposed or expected to occur.

**preattack planning** - In fire management, a system for collecting, evaluating, and recording fire intelligence data for a given planning unit. The planning phase is usually followed by a construction and development program integrated with other management functions

**precommercial thinning** - The practice of removing some of the trees less than marketable size from a stand so that the remaining trees will grow faster. (2)

**prehistoric site** - An area which contains important evidence and remains of the life and activities of early societies which did not record their history

**preparatory cut** - The removal of trees near the end of a rotation, which permanently opens the canopy and enables the crowns of seed bearers to enlarge, to improve conditions for seed production and natural regeneration. Typically done in the shelterwood system. (3)

**prescribed fire** - A wildland fire burning under specified conditions which will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Proposals for use of unplanned ignitions for this purpose must be approved by the Regional Forester. (2)

**prescription** - A written direction for harvest activities and regeneration methods.

**present net value (PNV)** - The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area. (1)

**preservation** - A visual quality objective that allows only for ecological changes (2)

**price** - The unit value of an output expressed in dollars. (10)

**price elasticity** - A measure of the sensitivity of the quantity of a good or service exchanged to changes in price. (10)

**priced outputs** - Priced outputs are those that are or can be exchanged in the market place. The dollar values for these outputs fall into two categories: market or nonmarket (assigned values)

**price-quantity relationship** - A schedule of prices that would prevail in a market for various quantities of the output exchanged (10)

**price trend analysis** - An analysis done to estimate how a particular FORPLAN solution would change if predicted price trends were increased or decreased.

**primitive recreation** - Those types of recreational activities associated with unroaded land -- e g , hiking, backpacking, cross-country travel. (6)

**proclaimed land** - Lands reserved from the Public Domain for National Forest purposes by presidential proclamation. (See also **reserved land**)

**program** - Sets of activities or projects with specific objectives, defined in terms of specific results and responsibilities for accomplishments. (10)

**program budget** - A plan that allocates annual funds, work force ceilings, and targets among agencies. (10)

**program budget level** - A single, comprehensive integrated program responsive to the Chief's direction that specifies a level of production attainable from a given investment of dollars and other resources Each budget level represents a complete, full, and independent package within the criteria and constraints identified (10)

**Programmatic Memorandum of Agreement** - An agreement between the USDA Forest Service, Pacific Northwest Region, the Oregon State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation on the management of two types of cultural resource sites found on the Forest Depression-era administrative structures and prehistoric lithic scatters

**programmed harvest** - The amount of timber on the Forest that is scheduled for harvesting The programmed harvest is based on current demand, funding, and multiple-use considerations.

**project** - An organized effort to achieve an objective identified by location, timing, activities, outputs, effects, and time period and responsibilities for executions (10)

**project design** - The process of developing specific information necessary to describe the location, timing, activities, outputs, effects, accountability, and control of a project.

**public involvement** - A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plan, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision making. (10)

**public issue** - A subject or question of widespread public interest relating to management of the National Forest System. (1)

**public participation** - Meetings, conferences, seminars, workshops, tours, written comments, responses to survey questionnaires, and similar activities designed and held to obtain comments from the public about Forest Service planning. (2)

**public participation activities** - Meetings, conferences, seminars, workshops, tours, written comments, survey questionnaires, and similar activities designed or held to obtain comments from the general public and specific publics

**purchaser road credits** - Credit earned by the purchaser of a National Forest timber sale by construction of contract-specific roads. earned purchaser credit may be used by the purchaser as payment for National Forest timber removed. (2)

**pyroclastic** - Formed by or involving fragmentation as a result of volcanic or igneous action. (5)

## Q

**quality extensive management (QE)** - Range management based on low operating and investment costs per acre. (3)

**quality intensive management (QI)** - Range management to obtain a high production of livestock through the best techniques of range management. (3)

## R

**range** - Land producing native forage for animal consumption, and lands that are revegetated naturally or artificially to provide forage that is managed like native vegetation. (6)

**range allotment** - An area designated for use of a prescribed number and kind of livestock under one management plan. (6)

**range allotment management plan** - An approved plan for managing a range allotment resulting in resolution of resource conflicts including riparian areas. Resource damages may still be occurring, however, the action items identified in the AMP are expected to stop resource damage or resolve resource conflicts over time.

**range condition** - The current productivity of a range relative to what that range is naturally capable of producing. (Also see **satisfactory range condition**.) (9)

**range environmental assessment (REA)** - An environmental assessment to determine the condition of the range with regard to suitability for grazing, vegetative cover types, potential vegetative communities, condition of vegetation, soil stability, and forage production and utilization.

**rangeland** - Land on which the climax vegetation (potential natural plant community) is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing and browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain forb and shrub communities. It also includes areas seeded to native or adapted introduced species that are managed like native vegetation.

**range management** - The art and science of planning and directing range utilization so as to secure sustained maximum production of livestock, milk, and/or cut forage, consistent with other uses and conserving natural resources. (3)

**raptors** - Predatory birds, such as falcons, hawks, eagles, or owls.

**RARE II** - An acronym for a second generation "Roadless Area Review and Evaluation" instituted in June 1977, to identify roadless and undeveloped land areas in the National Forest system. Its purpose was to determine which of the inventoried areas should be recommended to Congress for inclusion in the National Wilderness Preservation System, which areas should be managed for

nonwilderness uses, and which areas required further planning before a reasonable decision on them could be made

**rate of return** - The financial yield per unit cost determined as the rate of interest at which total discounted benefits equal total discounted costs. (Internal rate of return is a similar measure appropriate to the benefits and costs that affect private firms or individuals.) (10)

**real dollar** - A monetary value that compensates for the effects of inflation. (1)

**receipts** - Those priced benefits for which money will actually be paid to the Forest Service: recreation fees, timber harvest, mineral leases and special use fees.

**receipt shares** - The portion of receipts derived from Forest Service resource management that is distributed to State and county governments, such as the Forest Service 25-percent fund payments (1)

**Record of Decision** - A document separate from but associated with an Environmental Impact Statement which states the decision, identifies all alternatives, specifying which were environmentally preferable, and states whether all practicable means to avoid environmental harm from the alternative have been adopted, and if not, why not (40 CFR 1505.2)

**recreation capacity** - The number of people that can take advantage of the recreation opportunity at any one time without substantially diminishing the quality of the experience or the biophysical resources (2)

**Recreation Information Management (RIM)** - A computer-oriented system for the organization and management of information concerning recreation use, occupancy, and management of National Forest lands.

**recreation opportunity** - The availability of choices for users to participate in the recreational activities they prefer within the settings they prefer

**Recreation Opportunity Spectrum (ROS)** - A framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged along a continuum or spectrum divided into seven classes: Primitive, Semiprimitive Nonmotorized, Semiprimitive Motorized, Road-ed Modified, Road-ed Natural, Rural, Urban.

**primitive** - Area is characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.

**semiprimitive nonmotorized** - Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreational experience opportunities.

**semiprimitive motorized** - Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site

controls and restrictions use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.

**roaded natural** - Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

**roaded modified** - Timber harvest and other management activities may be dominant, but carried out within NFMA requirements. Interaction between users may be moderate to high with evidence of other users present. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

**rural** - Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities is designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.

**urban** - Area is characterized by a substantially urbanized environment, although the background may have natural appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans, on-site, are predominant. Large numbers of users can be expected, both on site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

**recreation visitor day (RVD)** - A measure of recreation use, in which one RVD equals twelve visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons. (2)

**recreational river** - See **wild and scenic river**

**redd** - Nest in gravel of stream bottom where fish deposit eggs. In this document, refers to salmon spawning redds.

**reduced service management** - Management of developed recreation facilities below optimum maintenance standards.

**reforestation** - The natural or artificial restocking of an area with forest trees. (2)

**regeneration** - The renewal of a tree crop, whether by natural or artificial means. Also, the young crop itself, which is commonly referred to as reproduction. (2)

**Region** - An area covered by a Regional guide. See FSM 1221.3 for organizational definitions. (10)

**Regional Forester** - The Forest Service official responsible for administering a single Region.

**Regional Guide** - The guide developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended. It guides all natural resource management

activities, and establishes management standards and guidelines for the National Forest System lands within a given Region. It also disaggregates the assigned Regional RPA objectives to the Forests within that Region

**regulated** - Stands which contribute to the calculated base timber sale schedule or departure. Herein includes green volume projections of FORPLAN.

**regulations** - Generally refers to the Code of Federal Regulations, Title 36, Chapter II, which covers management of the Forest Service. (2)

**rehabilitation** - Action taken to restore, protect, or enhance site productivity, water quality, or other resource values over a period of time

**release** - Freeing trees from competition for light, water, and nutrients by removing or reducing the vegetation growth that is overtopping or closely surrounding them

**removal cut (final cut)** - The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood method (6)

**renewable resources** - Resources that are possible to use indefinitely, when the use rate does not exceed the ability to renew the supply.

**renewable resources assessment** - An appraisal of the Nation's renewable resources that recognizes their vital importance and the necessity for long-term planning and associated program development. The Assessment meets the requirements of Section 3 of the Resources Planning Act and includes analyses of present and anticipated uses, demands, and supplies of the renewable resources; a description of Forest Service programs and responsibilities; and a discussion of policy considerations, laws, and regulations.

**research natural area (RNA)** - An area set aside by a public or private agency specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. In U.S.D.A. Forest Service usage, Research Natural Areas are areas designated to ensure representative samples of as many of the major naturally-occurring plant communities as possible (6)

**reserved lands** - Lands reserved from the public domain for National Forest purposes, and lands which are added to the National Forest System by exchange for reserved National Forest lands. (See **proclaimed land**)

**residual stand** - The trees remaining standing after some activity such as selection cutting. (2)

**resource** - Anything which is beneficial or useful - be it animal, vegetable, mineral, a location, a labor force, a view, an experience, etc. Resources, in the context of land use planning, thus vary from such commodities as timber and minerals to such amenities as scenery, scenic view points, or recreation opportunities. (6)

**resource allocation** - The action of apportioning the supply of a resource to specific uses or to particular persons or organizations. (6)

**resource management plan** - A Plan developed prior to the Forest Plan that outlined the activities and projects for a particular resource element independently of considerations for other resources. Such Plans will be superseded by the Forest Plan



**Resource Planning Act (RPA)** - The Forest and Rangeland Renewable Resources Planning Act of 1974 Also refers to the National Assessment and Recommended Program developed to fulfill the requirements of the act. (2)

**responsible line officer** - The Forest Service employee who has the authority to select and/or carry out a specific planning action (1)

**rest rotation** - An intensive system of range management whereby grazing is deferred on various parts of the range during succeeding years, allowing the deferred part complete rest for one year. (6)

**retention** - See **visual quality objective**.

**returns to counties** - The portion of receipts derived from Forest Service resource management that is distributed to State and county governments such as the Forest Service 25 percent fund payments.

**right-of-way (R/W)** - An accurately located strip of land with defined width, point of beginning, and point of ending, the area within which the user has authority to conduct operations approved or granted by the landowner in an authorizing document, such as a permit, easement, lease, license, or Memorandum of Understanding (6)

**riparian** - Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence Stream sides, lake borders, or marshes are typical riparian areas. (3)

**riparian area** - Geographically delineated areas, with distinctive resource values and characteristics, that are comprised of aquatic and riparian ecosystems

**riparian ecosystem** - A transition between the aquatic ecosystem, and the adjacent upland terrestrial ecosystem. Identified by soil characteristics and distinctive vegetation communities that require free or unbound water

**road** - A general term denoting a way for purposes of travel by vehicles greater than 40 inches in width

**forest arterial road** - Provides services to large land areas and usually connects with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and constant service (10)

**forest collector road** - Serves smaller land areas than a forest arterial road and is usually connected to a forest arterial or public highway Collects traffic from forest local roads and/or terminal facilities. The location and standard are influenced by both long-term multiresource service needs as well as travel efficiency. May be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility. (10)

**forest local road** - Connects terminal facilities with forest collector or forest arterial roads or public highways. The location and standard are usually controlled by specific resource activity requirements rather than travel efficiency needs. (10)

**road (temporary)** - Any short-lived road not intended to be a part of the forest development transportation system and not necessary for future resource management (10)

**Roadless Area Review and Evaluation II (RARE II)** - The national inventory of roadless and undeveloped areas within the National Forest and Grasslands. This refers to the second such assessment, which was documented in the Final Environmental Impact Statement of the Roadless Area Review and Evaluation, January 1979. (2)

**rotation** - Planned number of years between the formation of a generation of trees and its final harvest at a specified stage of maturity. Appropriate for even-aged management only. (6)

**roundwood products** - All timber products other than sawtimber and personal use fuelwood

## S

**sale preparation costs** - Costs associated with preparing a timber harvest on Forest Service lands for sale to the public; usually include all administrative costs for developing sale layout, writing an Environmental Assessment and selling the timber sale.

**sale schedule** - The quantity of timber planned for sale by time period, from the area of suitable land covered by a Forest plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained. (1) For planning purposes, the sale schedule and the allowable sale quantity are synonymous for all periods or decades over the planning horizon. (1)

**salvage cuttings** - Intermediate cuttings made to remove trees that are dead or in imminent danger of being killed by injurious agents. (10)

**sanitation cuttings** - Intermediate cuttings made to remove dead, damaged, or susceptible trees to prevent the spread of pests or pathogens. (10)

**sanitation-salvage treatment** - See **salvage cutting**; **sanitation cutting**.

**satisfactory cover** - a stand of coniferous trees 40 or more feet (12 or more meters) tall, with an average canopy closure equal to or more than 70 percent. (11)

**satisfactory range condition** - On suitable range, forage condition is at least fair, with stable trend, and allotment is not classified PC (basic resource damage) or PD (other resource damage).

### PC (basic resource damage)

Allotments will be classified as PC when analysis or evaluation indicates that one or more of the following conditions exist and livestock use on the allotment is or has been a major factor contributing to this condition.

- a. Maximum summer water temperatures are elevated above State Standards or other approved criteria on SMU class I or II streams and this is largely due to the loss of shade-producing vegetation in the allotment
- b. Management-induced instability exceeds 20 percent of the total miles of stream (SMU classes I-IV) in an allotment
- c. Gully development of sufficient size to lower the seasonally saturated zone and change the plant community type is occurring

- d. Soil condition rating on 25 percent or more of Key Areas is rated poor or very poor

**PD (other resource damage)**

These allotments may or may not have approved allotment management plans (AMP's), but adverse impacts on resources other than the basic soil and water resources are occurring. These impacts are the result of resource management objectives not being met. An allotment will be classified as PD when 10 percent or more of its area meets this criteria. Damage to vegetation is based on use in excess of that planned.

**scablands** - Shallow-soiled lands typically dominated by such species as low and stiff sagebrush.

**scarified** - Land in which the topsoil has been broken up or loosened in preparation for regenerating by direct seeding or natural seedfall. Also refers to ripping or loosening road surfaces to a specified depth for obliteration or "putting a road to bed." (3)

**scenic areas** - Places of outstanding or matchless beauty which require special management to preserve these qualities. They may be established under 36 CFR 294.1 whenever lands possessing outstanding or unique natural beauty warrant this classification. (6)

**scenic river areas** - See **wild and scenic river**.

**scheduled timber harvests** - Volumes and acres programmed for harvest which are within the allowable sale quantity. This does not include salvage and sanitation harvesting.

**scoping process** - A part of the National Environmental Policy Act (NEPA) process, early and open activities used to determine the scope and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an Environmental Impact Statement. (40 CFR 1501.7)

**second growth** - Forest growth that has become established following some interference, such as cutting, serious fire, or insect attack, with the previous Forest crop. (6)

**sediment** - Earth material transported, suspended, or deposited by water. (6)

**seed tree cutting** - Removal in one cut of the mature timber from an area, except for a small number of seed bearers left singly or in small groups. (3)

**seedlings and saplings** - Live trees less than five inches in diameter at breast height. (See also **size class**.) (3)

**selection cutting** - The annual or periodic removal of trees (particularly mature trees), individually or in small groups, from an uneven-aged forest, to realize the yield and establish a new crop of irregular constitution. (3)

**sensitive species** - Plant or animal species which are susceptible or vulnerable to activity impacts or habitat alterations. Those species that have appeared in the Federal Register as proposed for classification or are under consideration for official listing as endangered or threatened species, that are on an official State list, or that are recognized by the Regional Forester as needing special management to prevent placement on Federal or State lists. (2)

**sensitivity analysis** - A determination of the effects of varying the level of one or more factors, while holding the other factors constant. (6) (10)

**sensitivity level** - A measure of people's concern for the scenic quality of the National Forests. Three sensitivity levels are employed, each identifying a different level of user concern for the visual environment

- Level 1 - Highest sensitivity
- Level 2 - Average sensitivity
- Level 3 - Lowest sensitivity (2)

**sequential upper and lower bounds** - A FORPLAN term referring to the constraint that sets upper and lower limits by which harvest levels can increase or decrease from decade to decade. This constraint constitutes a departure from nondeclining flow and allows the harvest to rise or fall by decade according to the bounds that are set. (See **constraint**)

**seral** - A biotic community which is a developmental, transitory stage in an ecologic succession. (6)

**shelterwood** - The cutting method that describes the silvicultural system in which, in order to provide a source of seed and/or protection for regeneration, the old crop (the shelterwood) is removed in two or more successive shelterwood cuttings. The first cutting is ordinarily the seed cutting, though it may be preceded by a preparatory cutting, and the last is the final cutting. Any intervening cutting is termed removal cutting. An even-aged stand results. (3)

**short-span cable system** - In timber harvesting, any cable logging system capable of yarding logs only from distances of up to 2,000 feet.

**short-term** - Ten years or less.

**silvicultural examination** - The process used to gather the detailed in-place field data needed to determine management opportunities and direction for the timber resource within a small subdivision of a Forest area, such as a stand.

**silvicultural system** - A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop and provide for regeneration and according to the type of forest thereby produced. (3) (1)

**silviculture** - The art and science of controlling the establishment, composition, and growth of forests. (2)

**single-tree selection** - See **individual (single) tree selection**.

**site index** - A numerical evaluation of the quality of land for plant productivity, (6) . . . based on the height of dominant trees in a stand at an arbitrarily chosen age. (3)

**site preparation** - 1) An activity (such as prescribed burning, disking, and tilling) performed on a reforestation area, before introduction of reforestation, to ensure adequate survival and growth of the future crop, or 2) manipulation of the vegetation or soil of an area prior to planting or seeding. The manipulation follows harvest, wildfire, or construction in order to encourage the growth of favored species. Site preparation may include the application of herbicides; burning, or cutting of living vegetation that competes with the favored species, tilling the soil, or burning of organic debris (usually logging slash) that makes planting or seeding difficult.

**site productivity** - Production capability of specific areas of land.

**size class** - For the purposes of Forest planning, size class refers to the intervals of tree stem diameter used for classification of timber in the Forest Plan data base.

seedling/sapling = less than five-inch diameter

pole/sapling or pole timber = five-inch to nine-inch diameter

sawtimber = greater than nine-inch diameter (7 inches in future stands)

**skidding** - A general term for hauling loads by sliding, not on wheels, as developed originally from stump to roadside, deck, skidway, or other landing (3)

**skyline logging** - A system of cable logging in which all or part of the weight of the logs is supported during yarding by a suspended cable

**slash** - The residue left on the ground after tree felling and tending, and/or accumulating there as a result of storm, fire, girdling or poisoning. It includes unutilized logs, uprooted stumps, broken or uprooted stems, the heavier branchwood, etc (3)

**small game** - Birds and small mammals normally hunted or trapped. (2)

**smolt** - Young salmon or steelhead which migrate to the ocean

**smolt habitat capability index** - An indicator of the quality of rearing habitat for young salmon or steelhead (smolt) It assumes that spawning gravels are adequate to provide sufficient spawning areas to fully seed the existing rearing habitat and that sufficient numbers of adults will escape past fishermen, hydroelectric dams, or natural mortality to return and fully seed the spawning gravels It is expressed as the number of smolt which could be produced, estimating potential rather than actual production.

**snag** - A standing dead tree

**socioeconomic** - Pertaining to, or signifying the combination or interaction of social and economic factors (2)

**softwoods** - Coniferous trees, usually evergreen, having needles or scalelike leaves

**soil** - The portion of the earth's surface consisting of disintegrated rock and humus. (7)

**soil damage (detrimental compaction or displacement)** - For volcanic ash soils, an increase in bulk density of 20 percent over pre-harvest levels is considered detrimental compaction For all other soils, an increase of 15 percent in bulk density or more is considered detrimental compaction Detrimental displacement is the removal and horizontal movement of more than 50 percent of the topsoil or humus enriched A1 and/or AC horizons from an area of 100 square feet or more which is at least 5 feet in width

**soil productivity** - The capacity of a soil to produce a specific crop such as fiber or forage under defined levels of management. Productivity is generally dependent on available soil moisture and nutrients, and length of growing season.

**soil resource inventory** - See **soil surveys**.

**soil surveys** - Systematic examinations of soils in the field and in laboratories, their description and classification; the mapping of kinds of soil; the interpretation according to their adaptability for various

crops, grasses, and trees; their behavior under use or treatment for plant production or for other purposes; and their productivity under different management systems. (6)

**soil texture** - The relative proportions of the various soil separates in a soil, described by the classes of soil texture. Twelve basic soil texture classes are recognized, such as "loam." The textural classes may be modified by the addition of suitable adjectives when coarse fragments are present in substantial amounts; for example, "stony loam."

**special interest areas** - Areas managed to make recreation opportunities available for the understanding of the earth and its geological, historical, archaeological, botanical, and memorial features. (6)

**special management areas (SMA)** - Areas of unusual public interest or other significance, e.g.; wilderness, primitive areas, scenic areas, or archeological areas. SMA's do not require formal designation, however, Special Interest Areas do. (10)

**special places** - Special places on the Wallowa-Whitman National Forest, i.e., dispersed recreation sites, water features, rock or unique landform features, areas of unique vegetation, historic sites or other places which are special to Forest users will be protected, commensurate with other Forest management objectives.

**special use permit** - A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

**spike camp** - A hunting camp that is set up in advance of the client's arrival. This camp may be left up for the duration of the hunting season. The camp may or may not be used by the outfitter. The specific location is described in the permit. Also refers to an isolated fire camp, away from the primary fire camp.

**stand (tree stand, timber stand)** - An aggregation of trees or other vegetation occupying a specific area and sufficiently uniform in species composition, age arrangement, and condition as to be distinguishable from the forest or other vegetation or land cover on adjoining areas. (2)

**stand diversity** - Any attribute that makes one timber stand biologically or physically different from other stands. This difference can be measured by, but not limited to: different age classes, species, densities, or non-tree floristic composition.

**stand examination surveys** - Procedures to collect data on Forest stands.

**standard** - A statement which describes a condition when a job is done properly. Standards show how well something should be done, rather than what should be done. (6)

**standards and guidelines (S&G)** - Principles specifying conditions or levels of environmental quality to be achieved.

**standard motor vehicles** - Those which are normally used on highways and roads, such as passenger cars, pickups, four-wheel-drive pickups and station wagons, vans, trucks, and other types of vehicles that are not primarily designed for off-road use.

**statistical high bid (stat high bid)** - The successful bid for Forest stumpage.

**stocking** - The degree of occupancy of land by trees as measured by basal area or number of trees and as compared to a stocking standard, that is, the basal area or number of trees required to fully use the growth potential of the land.

**stream blockage** - Accumulation of soil, rock, and organic material deposited in a stream channel by landslides that prevent fish from moving upstream.

**stream buffer** - Vegetation left along a stream channel to protect the channel or water from the effects of logging, road building, or other management activity (See **vegetation leave area**)

**stream class** - Classification of streams based on the present and foreseeable uses made of the water, and the potential effects of on-site changes on downstream uses. Four classes are defined

Class I - Perennial or intermittent streams that provide a source of water for domestic use; are used by large numbers of fish for spawning, rearing or migration; and/or are major tributaries to other Class I streams.

Class II - Perennial or intermittent streams that are used by moderate though significant numbers of fish for spawning, rearing or migration; and/or may be tributaries to Class I streams or other Class II streams.

Class III - All other perennial streams not meeting higher class criteria

Class IV - All other intermittent streams not meeting higher class criteria (10)

**streamflow** - The flow of water, generally with its suspended load, down a well-defined water course (6)

**streamside management unit (SMU)** - An area of varying width adjacent to a stream where practices that might affect water quality, fish, and other aquatic resources are modified to meet water quality goals, for each class of stream. The width of this area will vary with the management goals for each class of stream, characteristics of the stream and surrounding terrain, and the type and extent of the planned activity.

**stream structure** - The arrangement of logs, boulders, and meanders which modify the flow of water, thereby causing the formation of pools and gravel bars in streams. Generally, there is a direct relationship between complexity of structure and fish habitat. Complex structure is also an indication of watershed stability

**stumpage (stumpage value)** - The value of timber as it stands uncut, in terms of an amount per unit of volume. (6)

**substantive comment** - A comment that provides factual information, professional opinion, or informed judgment germane to the action being proposed (10)

**successional stage** - A stage or recognizable condition of a plant community that occurs during its development from bare ground to climax; for example, coniferous forests in the Blue Mountains progress through six recognized stages: grass-forb; shrub-seedling, pole-sapling timber, young timber, mature timber, old-growth timber. (2)

**suitability** - The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices. (1) (2) (FSM 1905)

**suitable forest land** - Land to be managed for timber production on a regulated basis

**summer range** - A range, usually at higher elevation, used by deer and elk during the summer. Summer ranges are usually much more extensive than winter ranges (8)

**supply** - The amount of an output that producers are willing to provide at the specified price, time period, and condition of sale.

**supply schedule (curve)** - A schedule of amounts of an output that producers are willing to provide at a range of prices, at a given point in time and condition of sale. (See **price-quantity relationship** )

**suppression** - The process of extinguishing or confining fire. (2)

**sustained-yield of products and services** - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land. (1) (6)

## T

**targets** - Pacific Northwest Regional RPA output and activity levels which are assigned to the 19 Forests in the Region.

**technology change** - A change in the relationship between inputs and outputs in a production process resulting from the implementation of new technology, or a new application of existing technology. (10)

**tentatively suitable forest land** - Forest land that is producing or is capable of producing crops of industrial wood and, (a) has not been withdrawn by Congress, the Secretary, or the Chief, (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions, (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within five years after final harvest; and (d) adequate information is available to project responses to timber management activities.

**thinning** - A felling made in an immature stand primarily to maintain or accelerate diameter increment and also to improve the average form of the remaining trees without permanently breaking the canopy. An intermediate cutting (3)

**threatened and endangered (T&E) species** - See **threatened**; see **endangered**.

**threatened species** - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. (See also **endangered species**.) (2)

**tiering** - Refers to the coverage of general matters in broader environmental impact statements (such as National program or policy statements) with subsequent narrower statements or environmental analyses (such as Regional or Basin-wide program statements, or ultimately, site-specific statements) incorporating, by reference, the general discussions and concentrating solely on the issues specific to the statement subsequently prepared (40 CFR 1508.28)



**timber classification** - Forest land is classified under each of the land management alternatives according to how it relates to the management of the timber resource. The following are definitions of timber classifications used for this purpose.

**nonforest** - Land that has never supported forests and land formerly forested where use for timber production is precluded by development or other uses.

**forest** - Land at least 10-percent stocked (based on crown cover) by forest trees of any size, or formerly having had such tree cover and not currently developed for nonforest use.

**suitable** - Commercial forest land identified as appropriate for timber production in the forest planning process

**unsuitable** - Forest land withdrawn from timber utilization by statute or administrative regulation (for example, wilderness) or identified as not appropriate for timber production in the forest planning process.

**timber harvest schedule** - See **sale schedule**.

**timber production** - The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of Forest planning, the term "timber production" does not include production of fuelwood or harvest of unsuitable lands. (1) (2)

**timber sale program quantity (TSPQ)** - The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (ASQ) (chargeable volume) and any additional material (nonchargeable volume) planned for sale. Expressed as the average for the first decade

**timber stand improvement (TSI)** - Measures such as thinning, pruning, release cutting, prescribed fire, girdling, weeding, or poisoning of unwanted trees aimed at improving the growing condition of the remaining trees. (2)

**topography** - The configuration of a surface including its relief, elevation, and the position of its natural and human-created features. (6)

**Total Resource Information system** - See **TRI**

**total suspended particulates (TSP)** - Any finely divided material (solid or liquid) that is airborne with an aerodynamic diameter smaller than a few hundred micrometers

**tractor logging** - Any logging method which uses a tractor or other mobile surface units as the motive power for transporting logs from the stumps to a collecting point--whether by dragging or carrying the logs. (3)

**tradeoff** - The combination of benefits and costs which are gained and lost in switching between alternative courses of action. Trade-offs include only those portions of benefits and costs which are not common to all alternative courses of action under consideration. (6)

**transitory range** - Land that is suitable for grazing use of a nonenduring nature over a period of time, often found in the openings created by timber harvesting activities. For example, on particularly disturbed lands, grass may cover the area for a period of time before being replaced by trees or shrubs not suitable for forage. (6)

**TRI** - A natural resource data base used on National Forests in the Pacific Northwest (Washington and Oregon) to provide storage and retrieval for in-place resource data. TRI system is a multimedia information system using maps, aerial photographs, paper forms, microfilm, and computer storage to handle large volumes of data.

**TRI compartment** - An orthophoto map area for indexing and storing data locations. The scale is 4" = 1 mile, and covers approximately 6,500 to 8,000 acres, with boundaries on photo-identifiable features. Each compartment has a unique name and number used for information storage on the orthophoto maps and in the USDA Fort Collins Computer Center

**TRI-counties** - Baker, Union, and Wallowa Counties of Oregon -- the primary impact area of the Wallowa-Whitman National Forest

**turbidity** - The degree of opaqueness, or cloudiness, produced in water by suspended particulate matter, either organic or inorganic. Measured by light filtration or transmission and expressed in Jackson Turbidity Units (JTU's)

## U

**understory** - The trees and other woody species growing under a more-or-less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth. (6)

**undeveloped area** - Portion of the National Forest that is essentially unroaded.

**uneven-aged management** - The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection. (1)

**uneven-aged silviculture systems** - The combination of actions that result in the creation of forests or stands of trees, in which trees of several or many ages grow together. Cutting methods that develop and maintain uneven-aged stands are individual tree and group selecting cutting methods:

individual tree selection cutting - The removal of selected trees of all size classes on an individual basis.

group selection cutting - The removal of all trees in groups for regeneration purposes. The size of the group will be small enough in area that all subsequent regeneration will be influenced by the surrounding uncut stand. Cuts are generally .25 - 2.0 acres in size.

**ungulate** - A mammal with hooves (8)

**unplanned ignition** - A fire started at random by either natural or human causes, or a deliberate incendiary fire

**unregulated** - Timber which was not considered (because of land allocations or condition of trees) *in calculating a base sale schedule or departure. Unregulated timber includes salvage of epidemic mortality, volumes of cull material, or green volumes from unsuited lands.*

**unsatisfactory range condition** - Allotment does not meet criteria for satisfactory condition (See **satisfactory range condition**.)

**utility corridor** - A strip of land, up to approximately 600 feet in width, designated for the transportation of people, energy, commodities, and communications by: railroad, state highway, electrical power transmission (66 KV and above), and/or oil, gas, and coal slurry pipelines 10 inches in diameter and larger; and telecommunication cable and electronic sites for interstate use (See also **corridor**.) (1)

**utilization standards** - Standards guiding the projection of timber yields and the use and removal of timber. The standards are described in terms of minimum diameter at breast height, minimum length, and percent soundness of the wood, as appropriate. (1)

## V

**variety classes** - Variety Classes are obtained by classifying the landscape into different degrees of variety. This determines those landscapes which are most important and those which are of lesser value from the standpoint of scenic quality.

The classification is based on the premise that all landscapes have some value, but those with the most variety or diversity have the greatest potential for high scenic value.

*There are three variety classes which identify the scenic quality of the natural landscape:*

- Class A - Distinctive
- Class B - Common
- Class C - Minimal

**vegetative management** - Activities designed primarily to promote the health of the crop forest cover for multiple-use purposes.

**vertical relief** - A contour variation of the land surface perpendicular in relation to the surrounding land. (3) (4)

**viable population** - A population which has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population on the planning area. (FSM 1905)

**viewshed** - Portion of the Forest that is seen from a major travel route, or high use location.

**visual absorption capacity (VAC)** - The physical capability of the land to support management activities without significantly affecting its visual character. Rated as high, moderate, and low.

HIGH (H) - High visual capability to absorb change

MODERATE (M) - Moderate visual capability to absorb change

LOW (L) - Low visual capability to absorb change

**visual quality objective (VQO)** - Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

preservation (P) - Ecological changes only.

retention (R) - Management activities should not be evident to the casual Forest visitor

partial retention (PR) - Management activities remain visually subordinate to the characteristic landscape.

modification (M) - Management activities may dominate the characteristic landscape but must, at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

maximum modification (MM) - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background

enhancement - A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists. (2)

**visual resource** - The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors (2)

## W

**water rights** - Rights to divert and use water or to use it in place.

**water yield** - The measured output of the Forest's streams. (6)

**watershed** - The entire land area that contributes water to a drainage system or stream (6)

**wetlands** - Areas that are inundated by surface or ground water often enough to support, and usually do support, primarily plants and animals that require saturated or seasonally saturated soil conditions for growth and reproduction. (E.O. 11990)

**wild and scenic river** - Those rivers or sections of rivers designated as such by congressional action under the 1968 Wild and Scenic Rivers Act, as supplemented and amended. Wild and scenic rivers may be classified and administered under one or more of the following categories:

wild river areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted

**scenic river areas** - Those rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads

**recreational river areas** - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past. (2) (6)

Other terms pertaining to wild, scenic, and recreational river designation include

*potential rivers* - Rivers on the National Rivers Inventory, as well as those identified by the Forest Service as having "potential" for designation as Wild and Scenic Rivers, which flow partly or wholly through the Forest. These may or may not include rivers formally designated as "potential" by the Secretaries of Agriculture and the Interior under Section 5(d) of the W&SRA

*eligible rivers* - Those rivers found to be eligible for Wild and Scenic status according to resource considerations and in accordance with the Final Revised Guidelines for Eligibility, *Federal Register*, Vol. 47, no. 173, September 7, 1982. NRI rivers are not automatically eligible.

*suitable rivers* - Those eligible rivers found to be suitable for recommendation to Congress as a component of the National Wild and Scenic River System. Such a determination would be conducted *only* on rivers that are eligible. While there are no nationally recognized guidelines for a suitability determination, the following should be considered: the amount of private land and its use, state and local government as well as public interest, and cost involved. In other words, the eligibility study considers the resources, and the suitability study includes political, economic, and public interest considerations.

*study rivers* - Those rivers formally designated by Congress to be studied under Sections 5(a) and 5(b) of the W&SRA. Only one stream in the Pacific Northwest, the North Umpqua, is currently in this category.

*recommended rivers* - Those rivers which are found to be eligible and suitable, and which are recommended to Congress to become components of the National Wild and Scenic River System. In the past, such a recommendation has usually been made only after Congress first directed that a study be made under provisions of Sections 5(a) and 5(b) of the W&SRA. However, this does not preclude agency-initiated studies.

**wilderness** - Areas designated by congressional action under the 1964 Wilderness Act. Wilderness is defined as undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation. Wildernesses are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature with the imprint of human activity substantially unnoticeable, have outstanding opportunities for solitude or a primitive and unconfined type of recreation, are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecologic and geologic interest. (2)

**Wilderness Recreation Spectrum (WRS)** - A further refinement of the **primitive** portion of the ROS. The following terms deal only with officially designated wilderness.

**primitive trailed** - The sights, sounds, and smells relating to human activities outside the wilderness are essentially non-existent. The same factors relating to human activities within the

wilderness are minimized. An **extremely high opportunity** exists for exploring and experiencing considerable isolation, tranquility, and self-reliance.

**primitive trailless** - The most remote, generally the core area which is least accessible. Terrain, vegetation, trail density, and reasonable travel methods provide an area generally large enough to allow at least two days of cross-country travel without crossing a constructed trail. A **most outstanding** opportunity exists for isolation and solitude free from evidence of past human activity.

**semiprimitive trailed** - The least remote; generally those areas nearest trailheads and major access points or the wilderness periphery where the sights, smells, and sounds of human activities both within and outside the wilderness are affecting the wilderness visitor. Opportunities for a wilderness-related experience are only **moderate**.

**wildlife and fish user day (WFUD)** - Twelve visitor hours which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

**wildfire** - Any wildland fire that is not a prescribed fire. (See also **prescribed fire**.) (2)

**winter range** - A range usually at lower elevation, used by migratory deer and elk during the winter months; usually smaller and better-defined than summer ranges. The criterion for mapping big-game winter range was. These ranges represent the area occupied by approximately 90 percent of the elk population from December 1 to April 1, two out of three winters.

**withdrawal** - A legislative or administrative order removing specific land areas from availability for certain uses.

**wolf plant** - A plant species generally considered to be palatable, but which is not grazed. Absence of grazing allows the plant to evolve into a relatively large, coarse form intermixed with dead previous year's growth. Extensive root development allows the plant to successfully exclude competition from younger plants. The resulting coarse growth is less palatable and produces less forage growth than identical species exposed to periodic grazing.

**wood fiber production** - The growing, tending, harvesting, and regeneration of harvestable trees.

**woody material** - Organic materials necessary for stream channel stability and maintenance of watershed condition. It includes large logs and root wads.

**working circle (WC)** - A geographic division of the Forest created for administrative or marketing purposes. (3)

**working group** - A grouping of community types or forest types indicative of timber productivity.

## X, Y, Z

**xeric** - A dry soil moisture regime. Some moisture is present but does not occur at optimum levels for plant growth. Irrigation or summer fallow is often necessary for crop production. (3)

**yarding** - Hauling timber from the stump to a collection point (2)

**yield tables** - Tables that estimate the level of outputs that would result from implementing a particular activity. Usually referred to in conjunction with FORPLAN input or output. Yield tables can be developed for timber volumes, range production, soil and water outputs, and other resources.

**zone of influence** - The geographic area whose social, economic and/or environmental condition is significantly affected by changes in Forest resource production or management.





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